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AIMS AND SCOPE OF *INDUSTRY AND DEVELOPMENT*

Industry and Development attempts to provide a link between practitioners and theorists working on economic and related aspects of industrialization. The focus of the journal is on applied economics, particularly in areas emphasized in the Lima Declaration and Plan of Action on Industrial Development and Co-operation.

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Preface

Evaluation of the performance of public-sector industrial enterprises in developing countries was one of several subjects examined at the Expert Group Meeting on the Changing Role and Function of the Public Industrial Sector in Development, sponsored by UNIDO and held at Vienna, 5-9 October 1981. This issue of *Industry and Development* is devoted to that subject, and the articles in it are based on papers presented at the Meeting.¹

The articles reflect a broad range of views and deal with various aspects of performance evaluation. Most are concerned with concepts and methodology and one (Killick) deals with practical measurement and related data problems.

The reader should not expect to find here a fully balanced or complete assessment of performance evaluation. Rather, the intention is to make more widely available some of the work of UNIDO in this field² and to provide a modest contribution to the literature on this important and changing subject.

One requirement in performance evaluation is knowledge of objectives and their relation to control mechanisms. In his article, Leroy P. Jones emphasizes the distinction between commercial and non-commercial objectives. In manufacturing, commercial objectives will be of much greater importance than in other public-sector activities. Evaluation of performance in achieving such objectives is easier than evaluation related to non-commercial objectives.

Jones differentiates between "existential" objectives (those related to investment decisions and the setting up of a project) and operational ones. He argues that some non-commercial objectives (e.g. equitable regional income distribution) may be achieved during the investment phase (plant location in a backward area), so that non-commercial objectives do not have to be considered in operational decisions, which should primarily be based on commercial objectives. Evaluation of these commercial objectives could be done within a financial accounting system, with evaluation of remaining non-commercial objectives within a social accounting system (necessarily imperfect because of measurement difficulties).

The central question raised in the paper is who makes which decision and why. Jones argues that strategic decisions, such as setting objectives, providing resources and evaluating results, should be made at governmental level, but enterprise managers should be free to make operational decisions. Where this is not possible a process of "muddling through", which may have high efficiency costs, occurs. In manufacturing, because of the importance of commercial

¹Some of the articles contained here reflect revisions made by the author, and others have been condensed by the UNIDO secretariat or extracted from the original paper. A United Nations publication titled *Public Sector and Industrialization*, covering the whole range of issues considered at the Meeting, is currently under preparation.

²Assistance to public-sector industrial enterprise, mainly through provision of technical expertise, is a major component of the UNIDO work programme.

goals relative to non-commercial ones and the existence of markets and prices for resources and outputs, such costs can be minimized through use of a control system linking Government and management.

Jenkins and Lahouel also differentiate commercial from non-commercial operations, with the former evaluated on the basis of financial surplus (profitability), economic surplus and factor productivity and the latter on the basis of cost-effectiveness. Financial surplus must be considered because of its budgetary and distributional effects. Factors not properly reflected in financial accounts, such as market imperfections, regulated prices and learning effects, are included in the economic-surplus criterion; but because of the well-known practical difficulties in measuring economic surplus, the authors propose in addition the measurement of productivity, preferably total factor productivity.

They argue that cost-effectiveness analysis should be used to evaluate non-economic goals.³ On the basis of this, contractual compensation arrangements could be agreed between Government and enterprise.

Fernandes illustrates how a set of performance indicators may be developed. The approach is essentially pragmatic. Indicators are classified into physical, financial, marketing and socio-economic (compare with Jenkins and Lahouel). The author proposes that socio-economic objectives be disaggregated and related to specific corporate objectives and that evaluation criteria be devised to fit each objective.

Performance evaluation depends in part on political philosophy. Ansari examines differences and similarities in neoclassical (capitalist) and neo-Kaleckian (Marxist) thinking and relates these to evaluation. To simplify, the neoclassical approach admits the relevance of public enterprise only under conditions of market failure, where public-sector activity would improve social welfare under the Pareto criterion; the neo-Kaleckian approach approves of the public sector much more generally as providing a basis for social change and redistribution of income and power. Several criticisms of social cost-benefit techniques (such as proposed by Jenkins and Lahouel) are presented and contrasted with the socialist "recoupment period criterion". The author considers whether the neo-Kaleckian approach is of greater relevance to the situation in most developing countries in that it explicitly deals with the major problems facing them, i.e. social change and redistribution.

Performance evaluation is only one element in a system of public-sector control structures. Evaluation as such will do little good if other elements in the control structure are neglected. On the basis of Pakistani experience, Syed suggests a control structure consisting of five systems: (a) management information; (b) management control; (c) evaluation; (d) incentives; and (e) communications. Each of these must operate efficiently to achieve an effective signalling system.

In contrast to other papers contained here, Killick attempts an empirical evaluation of performance, mainly using data for the early and mid 1970s, in the public industrial sectors of four African countries—Ghana, Senegal, United

³A considerable debate has arisen in recent years in the literature on investment project analysis as to the theoretical as well as practical difficulties of incorporating non-economic objectives, such as income distribution, into a social cost-benefit analysis. Cost-effectiveness is simpler to apply and has been used in many developed countries to evaluate, for example, military expenditures.

Republic of Tanzania and Zambia. Factors included in the evaluation are financial achievement, output and productivity, balance of payments, employment, Africanization and distribution. Although the author emphasizes the poor quality and quantity of the data upon which his evaluation is based (clearly the conceptual issues discussed in other parts of this issue become somewhat academic if practical application is constrained by insufficient data), he concludes that among the objectives examined, success was achieved only with regard to Africanization. On the basis of available data, it appears that most of the enterprises examined were operated inefficiently and suffered from a variety of problems, the most important of which, according to Killick, may be the "trivialization of political control", i.e. failure of Government to make strategic decisions while at the same time interfering in operational ones (see previous reference, Jones).⁴ Such results, although based on a few low-income countries, poor data and simple methodology, give cause for concern. It should be noted that the "social transformation" goals discussed by Ansari were not dealt with by Killick.

To conclude this introduction, a fundamental question, concerning the stage in the decision-making process at which social cost-benefit analysis should be used, may be briefly considered. Several authors refer to the application of social cost-benefit analysis and Jenkins and Lahouel explicitly advocate its use. A major problem (not mentioned by Ansari) is that social cost-benefit analysis is a difficult tool to use, requiring specialized knowledge of economic welfare theory and trade-offs among national objectives, as well as a considerable data base. Use of social cost-benefit analysis at the project or operations level thus requires availability of large numbers of skilled manpower and a system of data dissemination, and thus expenditure of large amounts of resources. This is probably the main reason why social cost-benefit analysis of investment projects has been little used in practice, or only in simplified forms. Extension of its use to operational performance thus may not be practical.

There is a possible way around this problem. Social cost-benefit analysis is basically a technique for correcting prices so that they reflect social values and costs.⁵ Would it not be much simpler to apply the technique when national policy is being formulated through taxes and subsidies and structural reforms, so that market prices become equivalent to social prices?⁶ If the use of social cost-benefit analysis were to be shifted from the project level to the policy level a more consistent view of national objectives could be developed (since political decision-makers would be more closely involved); less trained manpower

⁴The point is also strongly argued in *Accelerated Development in Sub-Saharan Africa: An Agenda for Action* (World Bank, Washington, D.C., 1981).

⁵See, for example, *Guidelines for Project Evaluation* (United Nations publication, Sales No. E.72.II.B.11).

⁶It should be noted that the main argument for use of social cost-benefit analysis in project analysis is the assumption that Governments are constrained in their use of policy measures to achieve social goals, but that these can be achieved "through the back door" by adjusting investment decisions. This is the reasoning (apart from assuming government ignorance) behind "corrections" of the prices of saving, foreign exchange and labour. The argument is not very convincing, however. Who is to say that there is not some clear rationale, reflecting national goals, behind a particular tariff, for example? If there is, international prices are not relevant as shadow prices. If the validity of the tariff is to be questioned, it would seem that this should be done at the policy, rather than project level.

would be required; and project analysts and operational managers would be free to concentrate on market criteria and technical problems related to their own projects or enterprises.⁷ The benefits of such use of social cost-benefit analysis seem considerable.

⁷Social cost-benefit analysis at the project level is usually applied only for major investments within the public sector and may differ from project to project, depending on the skills and judgement of the evaluator and on data availability. Thus inconsistencies arise that would not occur in social cost-benefit analysis at the policy level.

EXPLANATORY NOTES

References to dollars (\$) are to United States dollars, unless otherwise stated.

A slash between dates (e.g. 1970/71) indicates a financial or academic year.

A hyphen between dates (e.g. 1960-1964) indicates the full period involved, including the beginning and end years.

In tables:

Three dots (. . .) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

The following abbreviations have been used:

EDF	Electricité de France
GIHOC	Ghana Industrial Holding Corporation
IDC	Industrial Development Corporation (Ghana)
INDECO	Industrial Development Corporation (Zambia)

The linkage between objectives and control mechanisms in the public manufacturing sector

Leroy P. Jones*

The issues

This paper may be considered a link between "why" studies concerning the "ends" of public enterprise (i.e. motives and goals) on the one hand and the "how" studies concerning "means" (e.g. organizational structure, performance evaluation) on the other. The basic question is: to what extent do different ends imply different means so that the appropriate control mechanisms vary in some systematic way across sets of enterprises with different objectives? More specifically, if public enterprises in manufacturing have different objectives from those in utilities, trade or finance, then does this imply different organizational structures, performance evaluation systems or degrees of enterprise autonomy?

These questions are asked in the hope that policy guidance can be derived from a specification of goals so that the perpetual controversies on appropriate public enterprise control policies can be narrowed, if not eliminated, by focusing on particular public enterprise subsets defined according to their objectives, that is, the underlying premises are that policies must follow from objectives, that all too often common policies are applied to enterprises having diverse objectives, and that the mismatch between policies and objectives is particularly acute in the manufacturing sector.

There are abundant examples of writings on public enterprise that follow this logic. One general form may run as follows: most public enterprises should pursue both commercial and non-commercial objectives, but the mix varies from enterprise to enterprise; as the role of commercial objectives increases the enterprise should be increasingly responsive to markets instead of ministers; and this in turn implies such policies as more autonomy for the enterprise and a greater role for profit as a performance indicator. For example, the original Morrisonian "theory of the public corporation"¹ argued that the commercial activities of the Government required more autonomy than that provided by the departmental legal form, and subsequent literature has suggested a plethora of alternative control devices supposedly appropriate for commercial activities. None of these devices has proved broadly successful, leading some to the view that the mixing of commercial and non-commercial objectives in one institution is inherently uncontrollable, with failure to achieve either objective the result.

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¹Herbert Morrison, *Socialization and Transport* (London, 1933). For an excellent survey of the evolution of this body of literature, see R. S. Arora, *Administration of Government Industries* (New Delhi, Indian Institute of Public Administration, 1969).

The solution that follows is a strict institutional segregation of objectives, with public enterprises being confined to commercial objectives and all non-commercial objectives left to other government agencies. Morrison supports the notion that some control structures are more appropriate for some objectives than others.

This paper assesses the strengths and limitations of such arguments. It can be thought of as a verbal matrix in which one dimension is objectives and the other is control policies. The two dimensions are defined in turn and their interdependence is then considered.

Objectives

Commercial versus non-commercial objectives

The distinction between commercial and non-commercial objectives is both common and useful, but is not generally well defined. At the extremes, of course, the distinction is clear: commercial objectives are similar to those of private firms, and they include such things as increasing sales and keeping unit costs to a minimum. Non-commercial objectives concern external effects of enterprise operations such as opening up a backward area or increasing national security. Fair enough, but what of cases where the objective is recognized by the private firm, but only partially (for example, generation of foreign exchange with an overvalued exchange rate)? Or, what about an objective that could be recognized by a private firm if the Government chose to motivate it to do so (for example, reducing pollution through a tax on effluents)? Are the objectives of earning foreign exchange or reducing pollution then commercial or non-commercial?

There are many ways to answer this question, but the following definition may be found useful: commercial objectives are reflected in the accounting system of the enterprise while non-commercial objectives are not. Achievement of commercial objectives may be evaluated at either privately relevant or publicly relevant prices. Generation of foreign exchange is then a commercial objective whose value will vary depending on the price the accounting system places on a dollar of foreign earnings or savings. Pollution control, on the other hand, can be either commercial or non-commercial depending on whether it is both quantified (e.g. in terms of particulate count) and charged within the accounting framework (e.g. as a tax per unit of particulate).

Under this definition, the commercial versus non-commercial partitioning of objectives is not immutable, but varies with the policy environment. This is a critical observation, because it says that the commercial versus non-commercial bifurcation of objectives is not an exogenous variable but an instrumental variable, that is, one major set of public enterprise policy decisions involves the degree to which objectives are commercialized. A common theme of public enterprise reform efforts is that non-commercial objectives should either be compensated or ignored. One may not wish to go this far, of course, but the main point cannot be ignored: commercialization is one major policy tool for dealing with the problems raised by non-commercial objectives.

Existential versus operational objectives

Existential objectives are achieved by the very existence of the enterprise and do not alter operational behaviour. They affect investment decisions but not operating decisions. Project evaluation criteria are altered, but not performance evaluation criteria. For example, the Government may decide to build a large integrated iron and steel plant to achieve objectives such as national security and self-sufficiency in strategic materials. These non-commercial existential objectives are achieved so long as the plant is built and actually produces steel, and the operational objectives are strictly commercial (e.g. to produce as much steel as possible while keeping costs down). Similarly, a plant may be located in a backward area in part to achieve the objective of regional development through job creation and spread effects. Once the location decision is made, however, this objective has been achieved, and the plant can still be operated according to commercial principles. Other objectives are operational and can be achieved only by altering behaviour. A particularly important subcategory is pursuit of income-distribution objectives which require selling at a subsidized rate. Or, to promote regional development, an enterprise may be required to spend some of its operational funds on roads, schools, housing, sanitation etc.

The distinction between existential and operational objectives is germane because of its relationship with the commercial versus non-commercial bifurcation. The reason is that many non-commercial objectives for manufacturing firms are existential rather than operational. To the extent this is so, an enterprise established in part to achieve non-commercial objectives can none the less operate according to commercial principles. To be sure, it may earn a lower rate of commercial return (say, in a backward region), but the interests of society can be served by its operating so as to make that return as high as possible (assuming the return is measured correctly). The degree to which non-commercial objectives are existential is open to question; but in the manufacturing sector, the correspondence would seem to be great, and failure to appreciate this may be a fundamental source of difficulty. To illustrate, in pursuit of job creation it is legitimate to choose a technology involving 50 men and 50 shovels over a technology employing one bulldozer and one man; the existential choice of technology decision having been made, the enterprise should then operate to maximize its surplus, generating resources to be used to buy more shovels and generate more employment (or pursue other social objectives). Instead, many public enterprises buy the bulldozer and then hire 50 workers, absorbing surplus in welfare payments to redundant workers and precluding further investment in real jobs. An operational tool has mistakenly been used to do an existential job.

The argument is not that there are no legitimate operational non-commercial objectives in public manufacturing enterprises, only that their share is small relative to both existential non-commercial and operational commercial objectives. If so, then there are clear implications for control procedures. One of these is that commercial accounts serve as a useful starting point for evaluating performance (though these accounts need to be adjusted to reflect publicly rather than privately relevant profit). Any remaining non-commercial operational objectives can then be allowed for by "commercialization" through

a social adjustment account, programme contract or other mechanism. Such devices are necessarily imperfect but may be adequate in a manufacturing firm where their weight is relatively small. It would be quite different in a regional development bank, where non-commercial operational objectives dominate and errors in measurement would be so large as to make the effort questionable as a control tool.

Multiple objectives versus "plural principals"

No discussion of public-enterprise objectives can be complete without reference to the problem of multiple objectives. Public enterprises are called upon to pursue a mix of commercial and non-commercial objectives, which can include such diverse goals as earning profits, redistributing income, subsidizing particular regions and sectors, earning foreign exchange, generating employment, and increasing the probability that the party in power will be re-elected. Having such a plethora of objectives can be equivalent to having no objective, and management is all too often left free to pursue either its own interests or a constantly shifting, incoherent mix.

While the problem of multiple objectives is certainly real, it is also misstated. As Leonid Hurwicz has pointed out,² the real difficulty is not one of multiple objectives but of "plural principals", i.e. involvement of individuals or groups with different aims. The simplest private enterprise faces a conflict between reducing inputs and costs while increasing output and revenues. Varied programming techniques are available for handling more complicated cases, and much of the economics profession is concerned with establishing weights (prices) to allocate resources so as to maximize objective functions involving multiple objectives. The real difficulty occurs when individual preferences differ. For a private enterprise, this is a comparatively minor problem, since the various stockholders are likely to have similar trade-offs that can be captured in the objective of profit (which is still a complex variable incorporating weights on various conflicting objectives). But similar agreement on the weights of the various elements of the social profit function of a public enterprise is unlikely. The Ministry of Labour may be primarily interested in employment; the Ministry of Finance, in profit; the politicians, in low prices in an election year; and so forth. The underlying problem is thus one of plural principals with different objective functions.

The problem of multiple objectives then is largely, though not entirely, one of plural principals, which in turn is in part a measurement problem. To clarify matters further, a digression on measurement is necessary.

Measurement of objectives: a digression

Measurement of objectives has two steps: establishing a price and establishing a quantity. The quantity determines the degree of achievement of the objective, while the price establishes the weight (trade-off) between that

²Discussions at the Second BAPEG Conference on Public Enterprises in Mixed Economy LDCs, Boston, United States, April 1980.

objective and others. The product of price times quantity yields a "value", which is the true end of measurement. For some objectives the achievement can be quantified, but its price cannot be determined. For example, pollution reduction can be quantified in terms of particulate count, but it is much more difficult to decide just how many dollars a particular reduction is worth to society. For other objectives both quantity and price are difficult to determine: for example, the prestige added by having a national airline or the increment to security from having a domestic munitions factory. The problem of plural principals can then exist when either quantities or prices cannot be agreed upon. For industrial projects, the failure to agree on price is probably the more common problem. Both the foreign exchange and the employment generated by a project can be measured, but the Ministries of Labour and Finance can be expected to disagree on the relative prices to be assigned to the two objectives. Note, however, that a problem can still exist with only one principal. It will occur if either the quantity cannot be established or if the principal is unable to decide on its own relative weighting.

The main point, then, is that both the problems of multiple objectives and plural principals can be reduced to the underlying difficulty of measurement. Difficulties such as these are, of course, not an obstacle but a challenge to the imagination of the academic community, and a variety of procedures have been proposed for dealing with the problem (e.g. through conjoint measurement theory).³ The applicability of such procedures for alleviating the problem may be debated. Here, the only point is that the critical feature distinguishing various classes of objectives is the degree to which their achievement can be quantified and prices, weights or trade-offs established. The question of the relationship between objectives and control devices can then be reformulated as follows: to what extent does the particular control device vary with the difficulty of measuring objectives?

Control systems

Control systems: the issues

A "control system" in the broadest possible sense may be defined as the answer to the question: who makes which decision and why? At the highest level of generality, the "who" answers may be confined to four foci: the Government, the enterprise, the market or the community. The "which" question is important because it emphasizes that there is no single optimal level of enterprise autonomy. If anything, the search is for an optimal pattern of autonomy, since different decisions should ideally be made in different locations. The choice between locations for a particular decision depends on the "why" question. Which individual or institution has the information, the professional capability and the motivation to use the decision-making power in the national interest?

³Howard Raiffa, "Decision-making in the state-owned enterprise", in *State-Owned Enterprises in the Western Economies*, Raymond Vernon and Yair Aharoni, eds. (New York, St. Martin's Press, 1981), pp. 54-62.

The more typical view of the control system is narrower in two respects: first, it focuses on the distribution of autonomy between the enterprise and Government, and more particularly on the distribution within Government; secondly, it tends to ignore the "why" issues. It thus focuses on such choices as legal form (departmental enterprise versus public corporation versus joint stock company); buffering (use of a holding company); type of parent ministry (single public enterprise ministry versus functional tutelary ministries); and audit control (commercial auditor and/or governmental board of audit). While such decisions are certainly important, the position taken here is that they are second-order decisions. First-order considerations involve which decisions should be left to Government; it is a second-order consideration as to where in Government it should be taken. The importance of the second-order decisions, however, should not be minimized; they can even be critical. Here, however, attention will be confined to the first-order question.

The market and the community must also be considered alternative control devices. As already noted, markets are an alternative to ministers. In Turkey, credit allocations to public enterprises are made by ministerial decisions, with the (public) banks simply validating the decision by issuing the required credit. Many United States public authorities, on the other hand, have the power to issue their own bonds in the market. This is sometimes described as giving the United States authorities more autonomy. More correctly, however, it should be viewed as a shift in power from the minister to the market. In neither case can the manager issue his own credit. The difference is that in Turkey he has to convince ministers that he is credit worthy; in the other, he has to convince the market in the form of large private institutional investors. To be sure, the two control organs are likely to define "credit worthiness" quite differently, creating quite different problems for managers, but it is by no means clear that the manager has "more" autonomy. The point is not that control via markets is necessarily superior to control via ministers. Indonesia's Pertamina was for many years allowed to borrow freely in international markets, with disastrous results. The point is only that the market must be considered an alternative to government control, and one must ask in what circumstances one is superior to the other.

Who is the principal? Who is the agent?

One of the most important elements of the control system, and the one most germane to the present paper, is who sets objectives and why. The answer may seem obvious. Conceptually, it is usually held that the Government is the shareholding principal and the enterprise the executing agent. It is then the function of the Government to set objectives and the function of the enterprise to achieve them. Despite the obviousness of this notion, it has been disputed by at least two writers.

Aharoni⁴ has argued that the real principal is the public at large, for whom a variety of agents act, including political parties, the legislative and executive branches of Government and the public enterprises. In short, Hurwicz's "plural

⁴Yair Aharoni, "The state-owned enterprises: an agent without a principal", in *Public Enterprise in Less Developed Countries*, Leroy Jones and others, eds. (New York, Cambridge University Press, forthcoming).

principals" become Aharoni's "abundant agents". Each agent's view of the public interest is influenced by its own individual and group interests, thus diminishing its ability to establish trade-offs on behalf of the public. Not surprisingly, public-enterprise managers sometimes view themselves as having at least as much of a claim on the objective-setting function as their erstwhile bureaucratic and political superiors. This particular view seems more common among public enterprise managers in individualistic societies such as Israel and the United States,⁵ and it is easy to think of several reasons why the Government may be preferred as a setter of objectives (more directly responsible to the people; superior unit in a hierarchy of agents; better equipped with information on broader social goals etc.). Nonetheless, the basic question is legitimate in asking just which of a tier of agents is best suited to interpret the interests of the citizens who collectively constitute the true principal. Aharoni suggests a pragmatic solution in the form of an independent "goal audit" to provide a periodic public forum for public scrutiny of the actions of various agents. Howard⁶ shares Aharoni's scepticism of relying solely on Government, but suggests that the problems arising from a chain of agents can be avoided by direct community input in the form of worker, community and consumer representation on boards of directors and by legal and other institutional intermediary groups to watch over the public interest.

The question, then, is which agent, under which circumstances, is best qualified to set objectives on behalf of the public principal. In particular, does the answer vary with the type of objective? In a loose sense it seems apparent that the more important non-commercial objectives are, the greater the need for the Aharoni-Howard kind of checks on the power of the Government to set objectives. There is, of course, a logical circularity here, with the class of objective determining the appropriate agent, who in turn chooses the objective. Nonetheless, it seems to make sense to argue that community or public input is much more important for activities such as a regional development bank, where non-commercial objectives dominate. In such a situation, the community or public representatives constitute a sample whose preferences may be taken as the basis for some type of weighting procedure to establish trade-offs. The Aharoni-Howard suggestions then become means of mitigating the measurement problem. At the other extreme, such steps may be trivial for a purely commercial oil exporter whose sole function is to generate surplus to be handed over to the Government.

A model control system

If the preceding problem is solved and a proxy principal (best individual or collective) established for the enterprise, then how should other decisions be divided between the Government and the enterprise? The best pattern, if there is such a thing, will vary across activities, across countries, and across organizations with different histories. Nonetheless, a useful starting point can

⁵For a discussion of the impact of cultural differences on public enterprises, see Ira Sharkansky, *Whither the State: Politics and Public Enterprise in Three Countries* (Chatham, Chatham House, 1979).

⁶John Howard, "The social accountability of public enterprises: law and community controls in the new development strategies", in *Public Enterprise in Less Developed Countries*, Leroy Jones and others, eds. (New York, Cambridge University Press, forthcoming).

come from viewing the public-enterprise sector as a particular variant of a more general organizational form. To a considerable extent this sector can be treated (like a transnational corporation) as a special case of the multidivisional firm. The parent ministry functions as the head office, the sector corporation is the regional or product-line division, and the companies are operating units. In such organizations, what classes of decisions should be made at the centre, and which at the periphery? More generally, what decisions should be made by any superior unit in a hierarchy? The answers provided to these questions by Williamson⁷ (for the multidivisional firm) and Jaques⁸ (for general hierarchies) are surprisingly similar and may be paraphrased as follows:

The head office (or superior unit) should:

- (a) Set objectives;
- (b) Evaluate performance according to those objectives;
- (c) Reward and penalize the chief executive officer according to that evaluation;
- (d) Appoint the chief executive officers;
- (e) Provide resources (finance);
- (f) Conduct long-range planning and co-ordination among units;
- (g) Do (almost) nothing else.

There are thus six narrow prescriptions and one broad proscription. The proscription is particularly important since it is so often violated. To the extent it is violated, it is no longer possible to hold managers accountable for performance according to objectives. The advantages of hierarchical specialization then break down.

Sources of degeneration

If the foregoing provides an appealing normative pattern for public enterprises, then has the control problem been solved? Unfortunately not, for there is an organizational second-best problem involved; that is, the interdependence among the seven precepts is such that if one is violated, it is no longer optimal to follow the others. Most important, if the prescriptions concerning setting objectives and rewarding achievement fail because of measurement problems, then it is no longer necessarily desirable to follow the proscription.

It is widely held that excessive government intervention in the internal affairs of enterprises is due to reasons such as civil service traditions, political inference and failure of bureaucrats to understand management practices. While such illegitimate reasons for interference are common, it is important to recognize that there are legitimate reasons as well. Briefly, if the Government cannot exercise control over results (because it cannot measure and reward performance), then it must exercise control over processes.

To illustrate, consider the determination of the level of working capital. In a private enterprise the power to set the level of working capital is almost

⁷Oliver Williamson, *Markets and Hierarchies* (New York, Free Press, 1975), pp. 132-154.

⁸Elliot Jaques, *A General Theory of Bureaucracy* (London, Heinemann, 1976), pp. 62-86.

invariably delegated to the chief executive officer by the shareholders and the board of directors. The assumption is that the manager will keep as much working capital as necessary for efficient operation, but no more, since the funds could otherwise be used to generate income directly (in economists' jargon, the manager will acquire working capital only up to a point where its marginal cost equals its marginal revenue). The reason that this is a safe assumption is that the manager is judged and rewarded on the basis of profit, which will rise or fall (in part) according to the correctness of decisions on the level of working capital. The board can therefore exercise its control function by examining outcomes (profit) rather than the process by which the outcome is generated. If, on the other hand, the manager has little or no reason to be concerned with raising the profit of the firm, then he may not make the correct decision on the level of working capital. He may divert funds from more productive uses by keeping levels of inventory and cash far beyond the level necessitated by prudent management, so as to reduce risk and avoid any possibly difficult decision—it is, after all, easier to keep funds in a chequing deposit account than to shuttle them constantly between short- and long-term interest-bearing deposits. Or, he may wish to have the working capital available to absorb possible losses and hence disguise inefficiency and keep the enterprise from being shut down. In such situations, the shareholder cannot wholly delegate the decision on the level of working capital.

In the case of public enterprise, there are two reasons for government involvement in the working capital decision. The first is macroeconomic control of the aggregate level of credit. Such control could be accomplished by setting an over-all credit ceiling to be allocated by price rationing. This effective delegation to the market would fail, however, if it were feared that managers would take "too much" regardless of the price. As a result of this second reason, various representatives of the Government—often high-level—can find themselves involved in trying to take detailed decisions as to just what constitutes legitimate working capital levels for individual firms. The difficulties are that the process is time-consuming, that the ministries often lack the information and the business expertise to know just what levels are "reasonable" and that scarce ministerial talent could be better used elsewhere. In sum, by any standard of modern management, the working capital decision should be delegated to the enterprise, but given inadequate measurement and reward for achieving objectives, it often cannot be.

The foregoing is merely one minor instance of a more general phenomenon. It also can explain ministerial involvement in hiring of middle-level management, wage setting, procurement policies, foreign travel and much else. The legitimate explanation is that when the principal cannot control outcomes, he must control processes. Delegation of operational decisions to an agent presupposes effective control of outcomes. This in turn requires that desirable outcomes be quantified and that there be some incentive mechanism to ensure that the manager cares about the outcome. In sum, when the prescriptions are not carried out, then it is often legitimate to violate the proscription, legitimizing intervention as an organizational second-best solution.

Another link between objectives and policies has now been identified. When objectives are measurable, then a much broader class of decisions can be delegated to the enterprise and the market.

Dissent, synthesis and conclusions

Muddling through: a dissenting view

This paper would appear to have been written by a narrowly technical economist with a naive faith in rational decision-making based on clear specification of goals, establishment of trade-offs involving conflicting parties, followed by judicious choice of "least-cost" means of achieving those goals selected from among a comprehensive set of alternatives. That is all very fine in theory, but it is not the way things work in the real world. More important, it is not the way things should work. Lindblom and others have argued that:

"... such a *synoptic* or comprehensive attempt at problem solving is not possible to the degree that clarification of objectives founders on social conflict, that required information is either not available or available only at prohibitive cost, or that the problem is simply too complex for man's finite intellectual capacities."⁹

Instead, public policy decisions require a process of "muddling through" on "disjointed incrementalism" in which conflict is minimized and consensus built by explicitly avoiding focusing on goals, let alone quantifying trade-offs; rather, concern is focused on marginal changes from existing policies, with the aim of forging temporary coalitions among interest groups who can agree on a particular policy while disagreeing fundamentally on basic objectives.

For the public-enterprise sector, Murthy¹⁰ has argued that one of the major "stage one" tasks of managers is to adapt to an environment of plural principals by choosing policies that reflect consensus or at least do not provoke opposition. To the extent that the managers succeed, in this effort, they are delegated increased autonomy and move to stage two of public-enterprise evolution.

An attempt at synthesis for the public manufacturing sector

As always, a synthesis is possible, whether or not it is desirable. The tactic is to bifurcate activities according to whether the preponderance of relevant objectives is commercial or non-commercial. At one extreme are decisions such as the trade-off between military aeroplanes and elementary education. Here, synoptic rationality is inappropriate and disjointed incrementalism is unavoidable. The critical premise for this paper is that the activities of public

⁹A. O. Hirschman and C. E. Lindblom, "Economic development, research and development, policy making: some converging views", *Behavioral Science*, vol. 7, 1962, pp. 211-222. For the seminal article, see C. E. Lindblom, "The science of 'muddling through'", *Public Administration Review*, Spring 1959, pp. 79-88. For a review of Lindblom and an attempted synthesis with the technocratic approach, see Charles L. Schultze, *The Politics and Economics of Public Spending* (Washington, D.C., Brookings Institution, 1968). For a selection of papers on related issues, see *The Economic Approach to Public Policy: Selected Readings*, Ryan C. Amacher, Robert P. Tollison and Thomas D. Willett, eds. (Ithaca, Cornell University Press, 1976).

¹⁰K. R. S. Murthy, "Strategic management of public enterprises: a framework for analysis", Paper presented at the Second BAPEG Conference on Public Enterprise in Mixed Economy LDCs, Boston, United States, April 1980.

manufacturing enterprises lie much nearer the other end of the spectrum, with non-commercial operational objectives being a small share of the total. An integrated steel mill in a backward area may have the legitimate non-commercial objective of contributing to community development through road building etc., but whatever value is put on such an activity will be small relative to the value of the steel output and the energy and iron inputs. For such an enterprise even large errors in measurement of non-commercial objectives will be a small share of total enterprise performance. Accordingly, efforts to commercialize non-commercial objectives through programme contracts or social-adjustment accounts, however imperfect, will involve acceptable margins of error. In this scheme the primary operational objective of the manufacturing sector is to generate surplus for transfer to the Government for use for other public purposes, with secondary non-commercial objectives being quantified and treated as dividends-in-kind. The distribution of surplus at the government level is necessarily subject to a muddling-through decision process, but the generation of surplus at the enterprise level can be governed by synoptic rationalism.

Synoptic rationalism is, of course, contrary to common practice, since much public-enterprise decision-making is more aptly described by the model of disjointed incrementalism. This practice may be defended, but the price is high in terms of resulting cost inefficiencies. The author has calculated¹¹ that the benefits from improving public-enterprise efficiency by only 5 per cent would:

(a) In Egypt, amount to about 5 per cent of GDP, equivalent to 75 per cent of all government direct taxes or enough to triple government expenditures on education;

(b) In Pakistan, amount to about 1 per cent of GDP, equivalent to 53 per cent of direct taxes or enough to fund a 46 per cent increase in government expenditures on education;

(c) In the Republic of Korea, amount to 1.7 per cent of GDP, or over one billion dollars in 1981.

Summary

The propositions of this paper may be summarized as follows:

1. For control purposes, the most important way in which objectives differ is in the ease with which they can be measured.
2. Where objectives are measurable, then a pure model of principal-agent relationships can be applied, and the appropriate control system consists of six prescriptive functions to be carried out by the Government with all remaining decisions delegated to the enterprise and the market.

¹¹"Improving the operational efficiency of public industrial enterprises in Egypt", Report for the United States Agency for International Development (August 1981), "Efficiency of public manufacturing enterprises in Pakistan", Report for Pakistan Ministry of Production and the World Bank (February 1981) and "Comments on development of a performance evaluation system for Korean public enterprise sector" (Seoul, Korea Development Institute, June 1981).

3. Where objectives are not measurable, then the hierarchical model breaks down, and an inchoate process of muddling through must be resorted to. This can result in legitimate government intervention in the internal operations of the firm, but has major efficiency costs.

4. Most, if not all, public enterprises have both commercial and non-commercial objectives, but in the manufacturing sector the operational non-commercial objectives are generally small relative to the total, rendering acceptable the errors in measurement inherent in devices for commercializing objectives such as programme contracts or social-adjustment accounting. Once such devices are in place, the model referred to above provides a norm towards which reform of the control system can aim.

Evaluation of performance of industrial public enterprises: criteria and policies

Glenn P. Jenkins and Mohamed H. Lahouel***

Introduction

The industrial public enterprise sector plays an important role in the economies of developing countries. It spans a whole variety of industries from petrochemicals to textiles. It has produced over 50 per cent of industrial output in countries such as Egypt, Somalia or the United Republic of Tanzania and over 25 per cent in India and Turkey. Its share in total manufacturing investment has been as high as 90 per cent in Egypt and 50 per cent in Mexico. Relatively vast resources are therefore made available to this sector so that a given country's economic welfare is likely to be substantially affected by the nature and the size of the output that public enterprises generate out of these resources. It is thus important to be able to assess the net contribution of public enterprise operations in the country's welfare and to ensure that they work towards maximizing benefits.

A public enterprise is expected to fulfil many objectives: generate a financial surplus; help reduce unemployment; develop skills; and contribute to growth, technical progress and the correction of regional imbalances. The important issue that is addressed in this paper is how to evaluate public enterprise performance in view of the multiplicity of objectives thrust upon it.

The first criterion that comes to one's mind and especially to the finance minister's is that of financial profitability. Indeed, almost all the studies on public enterprises are limited to this criterion. Quite often, however, public enterprises engaged in manufacturing are not financially profitable. Poor financial performance is usually explained away by vague references to the fulfilment of socio-economic functions.

This paper suggests that the financial-surplus criterion ought not to be neglected, in spite of all its shortcomings. The main reason is the overall budget constraint of the Government. It must, however, be used in conjunction with the economic-surplus and the factor-productivity criteria. It is argued that these three criteria should be applied only to the commercial operations of the enterprise. As regards non-commercial objectives, performance should be evaluated only on the basis of cost-effectiveness.

The first part of the paper deals with financial profitability, economic profitability and factor productivity. The advantages and pitfalls of each

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criterion are discussed. The kinds of adjustments to the financial statements of public enterprises that are required to determine economic surplus are reviewed. The second part examines the problems that arise with regard to socio-economic objectives. They concern the articulation of these objectives and the assessment of the costs involved.

Indicators of performance

A principle that should not arouse controversy is that the performance of a public enterprise ought to be assessed on the basis of its net contribution to social welfare, properly defined, which is equal to the difference between the social value of the benefits it generates and that of the resources it uses. Thus, from a social standpoint a public enterprise is making a positive contribution to welfare if it produces social benefits that are at least equal in value to their social costs. It is hard to question the validity of this principle. Problems arise, however, when trying to assess this net contribution.

Financial profitability

Although it may take into consideration social responsibilities and constraints, a private firm generally directs its operations towards maximizing financial surplus because its owners are interested in enhancing their purchasing power. Would public enterprise serve the public interest if it pursued the same profitability target?

Financial surplus is defined as the difference between output and cost of production, both valued at market prices. Neoclassical economic theory tells us that in the absence of any market imperfections and distortions, and provided income distribution is socially optimal, the maximization of financial surplus by each firm results in the best resource allocation in the following sense: no quantity of any good can be increased without reducing that of another good; no consumer can be made better off without making some other consumer worse off, and social welfare is maximized.

In this "ideal" world, public enterprise would serve social welfare best by directing its operations towards the maximization of financial profit. Its performance ought then to be judged on the basis of the financial return per unit of capital used. Fluctuations in profitability due to factors outside the control of managers should be taken into account, but on the average a specific public enterprise ought to generate a return on capital at least equal to the return that could be obtained in alternative uses.

In contrast to this "ideal" state, economies are in fact riddled with market imperfections and distortions. First, even in developed countries many industrial sectors, such as the steel or the automobile sectors, are characterized by an oligopolistic market structure that permits a few firms to control prices. In developing countries, public enterprises often enjoy quasi-monopoly power, especially in heavy industries, so that relatively high financial surplus could be achieved by restricting output and charging high prices, thus reducing social

welfare. The high tariff barriers that have been erected in most developing countries have enhanced the capacity of public enterprise to dominate domestic markets. In view of such market structure, financial profitability does not necessarily reflect the contribution to social welfare.

Secondly, market prices of inputs and produced goods often do not reflect their opportunity costs because of taxes, tariffs and quotas on imports and administratively set prices. A positive financial performance may under these conditions be consistent with negative social surplus or even negative value added, if the latter were evaluated at international prices.

Thirdly, public enterprises are often called on to undertake activities for which they do not receive financial compensation. To maintain or expand employment, they may be asked to hire workers beyond the level warranted by maximization of financial surplus, incur higher fixed or operating cost by locating plants in disadvantaged regions of the country, bear the cost of training young workers, and keep prices of their products low so as to help low-income groups or to reduce inflationary pressures. While the financial costs of these objectives may be borne by public enterprises, the benefits generated are not reflected in their revenues, so that financial surplus will be a misleading indicator of social surplus.

Fourthly, a public enterprise cannot be expected to be financially profitable in its early life if it is engaged in manufacturing activities where a learning period is required before resources can be efficiently used.

For all these reasons financial profitability may not reflect the economic contribution of public enterprise. Furthermore, the manager of a public enterprise should not be held accountable for poor financial performance if government representatives frequently interfere in day-to-day operations or if he is instructed to pursue multiple objectives that may or may not include financial profit.

In spite of all these weaknesses, the indicator of financial profitability should not be discarded. Public enterprise is unlikely to be run efficiently in the long run if it does not run a surplus or at least break even. To the extent that success in its operations requires relative autonomy, the ability to cover costs and run surpluses for the purpose of investment is needed. An enterprise that constantly runs deficits has to deal with bureaucratic interference that is bound to affect its operations adversely.

One may even go further to suggest that a public enterprise is unlikely to serve socio-economic goals unless it generates adequate internal funds; socio-economic activities are often the first to be cut when a public enterprise faces financial difficulties. Theoretically, the funds needed could come from the government budget. The problem is that owing to its limited capacity to tax and the size of the subsidies involved, Government may be forced to run budget deficits that have to be financed by printing money. In view of the budget constraint of the Government, manufacturing public enterprises should take financial profitability into account, although it does not mean, as argued above, that they should seek to maximize financial surplus. In addition, the financial target should be set over a period long enough to allow for fluctuations in the general conditions of the environment in which public enterprise operates.

Economic profitability

Financial profitability should not, however, be the main criterion against which performance is to be assessed because of the market imperfections and distortions that have been previously mentioned and the multiplicity of objectives that are commonly demanded of public enterprises.

The economic contribution of a public enterprise is equal to the difference between benefits and costs, measured at accounting prices, that is, at prices that reflect the opportunity costs of both output and the inputs used. Several adjustments to domestic market prices have to be made to arrive at the economic contribution. Since the economic literature on shadow pricing is well developed, these adjustments will be reviewed only briefly.¹

First, it has been argued that the wages paid to manufacturing workers in developing countries are above the value of their marginal product in alternative employment, which is the relevant economic cost of labour. If, for instance, the workers employed by a given public enterprise have been hired from a pool of unemployed, then their opportunity cost is zero.² The opportunity cost for unskilled labour may be approximated by the wage rate prevailing in the rural labour market, provided that the latter is sufficiently competitive. Another component of the economic cost of labour is the additional cost that workers may have to incur in an industrial environment, such as transportation to the factory, additional food or shelter.

The second financial cost that has to be adjusted is that of borrowed funds. Public enterprise may borrow from government-owned or government-controlled banks at rates below the opportunity cost of capital or obtain loans from private domestic or foreign banks with government guarantees, which would place it at an advantage vis-à-vis private firms. The economic cost of borrowed funds has to be deducted from gross benefits if Government is concerned with the social return to equity capital. Public enterprise borrowing from domestic financial markets entails a combination of reduced present private investment and consumption, whereas loans secured from abroad require a reduction in future consumption. The opportunity cost of credit to public enterprise is therefore a weighted average of the consumer's rate of time preference, the rate of return on capital in the private sector—properly adjusted for risk—and the foreign lending rate, with weights reflecting the three sources of credit. There is also an implicit cost borne by the Government in guaranteeing loans against default by public enterprise, which should be considered a component of the economic cost of borrowed capital.

A third correction involves the values of inputs imported or goods exported by public enterprise. In most developing economies exchange rates are characteristically overvalued. Excess demand for foreign exchange is usually suppressed through tariffs and quotas on imports. The overvalued official exchange rate does not reflect the opportunity cost of one unit of foreign exchange used by public enterprise, especially if the latter receives preferential tariff or quota treatment. Use of foreign exchange by public enterprise may

¹See, for instance, Lyn Squire and Herman G. Van Der Tak, *Economic Analysis of Projects* (Baltimore, Johns Hopkins University Press, 1975).

²The opportunity cost is, however, positive if more employment in manufacturing induces people to migrate to urban areas.

entail either a reduction of imports by other economic units, a reduction of exports or a combination of both. In the simple case where the total cost is imports forgone by other units the economic cost is equal to the ratio of the domestic value of imports to their c.i.f. value; domestic value is equal to the sum of c.i.f. value, tariffs and an estimate of the premium derived from quotas. When exports are taken into account, the formula for the shadow exchange rate becomes more complicated. The exports of public enterprises should also be valued not at the official but at the shadow exchange rate.

The latter adjustment also applies to government-set prices. Government may, for instance, set the price of fertilizer produced by a public enterprise relatively low so as to subsidize a given category of farmers. The economic value of public enterprise output is not in this case the government-set price but the international price, converted at the shadow exchange rate.

Another type of adjustment that has to be brought to the financial accounts of public enterprise deals with taxes it may pay the Government or subsidies it may receive from it. For the purpose of economic calculation, taxes paid by public enterprise do not constitute a cost, and subsidies received are not part of the economic benefits it generates. Both items are merely transfers that take place between Government and public enterprise.

In addition, the pricing policies of public enterprise may be directed by Government towards improving income distribution. Welfare economics tells us that pricing in accordance with Pareto optimality is desirable only if Government can achieve the desirable income distribution through non-distortive taxes and transfers. The latter tools do not, however, exist. Furthermore, Government's capacity to tax and effect transfers at reasonable administrative costs may be limited. An alternative way of improving income distribution would then be to underprice public enterprise produced goods that take up larger shares in the budget of the poor than in the budget of those better off. The distributional benefits should be credited to the public enterprise involved. These benefits may be difficult to assess, but they must be equal at least to the difference between the domestic value of the public enterprise's output under competitive conditions and its actual value.

Public enterprise may carry out other activities of social value but for which it may not receive any pecuniary compensation. It may, for instance, be asked by Government to locate some of its plants in an economically disadvantaged region of the country. Such location is likely to increase both capital and operating costs. Whereas these costs are borne directly by the public enterprise involved, the benefits accruing to the region will not show up in its financial accounts. Ideally, these benefits should be estimated and added to the public enterprise's gross revenue, adjusted at shadow prices as previously indicated—a difficult task. In addition, the location decision may be imposed by the Government on a public enterprise even if the public enterprise has doubts about the benefits that the Government argues would accrue to the region. It may therefore be more reasonable to exclude both the positive externalities that may accrue to the region and the incremental cost of locating plants in poor areas from the calculation of social surplus. This does not, however, mean, as will be explained later, that cost-efficiency performance of public enterprise with regard to the objective of correcting regional imbalances and other non-commercial objectives should not be assessed.

Other non-commercial activities that may be undertaken by public enterprise include the provision of social and economic services to the community in the midst of which it operates, such as free or subsidized electric power, free access to its own health facilities or the building of roads. A public enterprise may also provide its own employees with free or subsidized social services such as housing or summer camps for children that are not part of operating cost and should therefore be costed out of net social surplus.

There are other tasks Government may thrust upon public enterprise that lie outside its commercial activities, such as training workers and maintaining or expanding employment beyond the level warranted by some minimum financial profitability or even economic profitability, the latter assessed at shadow prices. These costs should also be assessed and separated, to the extent possible, from those of purely commercial operations. Methods to assess them will be explained later.

The preceding section has reviewed the types of adjustments to the public enterprise financial accounts that are necessary in order to measure social profitability. Carrying them out is not, however, a straightforward task. There are difficulties, for instance, in estimating the true economic cost of labour, even though there is some agreement among economists that it is lower than the actual wage rate; in estimating the shadow price of foreign exchange when quantitative restrictions loom large in the trade regime; or in estimating the costs of non-commercial objectives. The types of adjustments that could be made with some degree of confidence would therefore vary from country to country depending on the availability and reliability of data. However, a meaningful evaluation of the economic performance of public enterprise requires that a minimum of three adjustments be made: re-evaluation of traded inputs and finished goods at the shadow price of foreign exchange, estimation of costs of non-commercial objectives and estimation of the true opportunity cost of borrowed funds.

Starting with the financial accounts and after making, to the extent possible, the corrections mentioned above, the economic surplus generated by public enterprise can be calculated. It is supposed to reflect the efficiency with which public enterprise has used productive resources. As an indicator of performance, economic surplus must, however, be used in conjunction with other indicators. As has already been pointed out, financial profitability must also be taken into account because of the government budget constraint, even if it is not likely to be highly correlated with the economic-surplus indicator.

It is also important to recognize the wide margin of error estimates of shadow prices are subject to. Public enterprise may show a much higher economic performance at one set of shadow prices than at another set. Furthermore, the public-enterprise contribution to growth in income per capita to the process of learning and to technical progress may be more directly captured by measures of factor productivity than by the economic-surplus criterion.

In a comparative study of the performance of Asian fertilizer plants, Leroy Jones³ suggests that the use of the rate of capacity utilization as a complement to that of economic profitability. He argues that the correlation

³Leroy Jones, "Public enterprise performance: a methodology and an application to Asian fertilizer plants", unpublished manuscript (1979).

between these two indicators is likely to be high for the following reasons: fertilizer output is homogeneous, so that technically it is difficult to raise capacity utilization at the expense of quality; average fixed cost and even variable cost decline where output is raised. This criterion is not, however, free of pitfalls. First, determining productive capacity may be difficult, as Jones himself has pointed out. (He has suggested ways of doing it in the specific case of fertilizer plants.) Secondly, a high degree of capacity utilization may not be associated with an output of a high social value, so that Government may have to accept large inventories of finished goods or market them at subsidized prices. Finally, it may be achieved in some manufacturing sectors at the high cost of input wastage. For all these reasons, capacity utilization remains a partial indicator of performance. It may nevertheless be useful, particularly in assessing the performance of public enterprise involved in highly capital-intensive industries.

Factor productivity

Changes in factor productivity ought to be reflected in the economic surplus public enterprise generates. If public enterprise uses inputs with greater efficiency, its economic surplus will be larger. That does not, however, mean that the factor-productivity indicator is redundant. First, the two indicators are calculated using different methods; factor productivity is traditionally measured by the ratio of physical output to labour, capital or a combination of both, whereas economic surplus is measured by the value of net benefit, estimated at accounting prices. The former criterion is therefore a way of checking the robustness of calculations of economic surplus. Secondly, productivity is a more direct criterion to assess the contribution of public enterprise to growth and learning to use resources more and more efficiently, especially when total factor productivity is used as a measure. If a public enterprise operates in an infant industry or is expected to contribute to the expansion of the country's manufactured exports, an undertaking that requires it to become competitive in international markets, then it is important to assess its factor-productivity growth. As will be seen shortly, this criterion is not without problems.

The best known measure of factor productivity is the ratio of gross output or value added to labour employed. It is often used when comparing performance of public enterprise and private firms operating in the same industry or in assessing the progress made by a given public enterprise over time. It is a straightforward measure when output and labour inputs are homogeneous. This is rarely the case; in general, the value of output must be converted into real terms at appropriate deflators, and labour categories of different skills must be aggregated into a total labour input. In addition, some employees may have been imposed by Government on public enterprise to reach some employment objective. Unless corrected for such externally imposed overmanning, the productivity measure will then be distorted, since it may show poor performance even though the public enterprise may not be at fault. Finally, improvements in labour productivity are not always associated with greater efficiency in using resources. Productivity may indeed be raised by adopting more capital-intensive techniques. Account must therefore be taken of the capital used per unit of output.

An alternative measure of factor-cost efficiency is the capital-output ratio. It requires knowledge of public enterprise capital stock with all the problems of estimation involved: calculation of true economic depreciation, aggregation of different capital goods. This measure also remains a partial indicator, since it does not take account of use of labour. In addition, it may be misleading to assess a public enterprise's performance by comparing its capital-output ratio with that of private firms in the same industry if Government reduces the cost of capital to it below the market cost through loan guarantees, subsidies and low return to equity requirements.

Meaningful conclusions can be based on single-factor-productivity measures only if both ratios of labour and capital to output move in the same direction in times series or across private and public enterprises of the same industry. Otherwise, total factor productivity is a superior criterion of performance.

The change in total factor productivity over a given period can be measured by the difference between the rate of growth of output or value added and a weighted average of the rates of growth of labour and capital stock, the weights reflecting roughly the shares of the two inputs in the value of output. The difficulties involved in determining the real quantities of output, labour and capital that are required for measuring partial productivity are also at play when measuring total productivity. Nevertheless, the latter is a more correct indicator of productivity performance. So far it has been rarely used in practice, especially at the enterprise level. In France, contracts that have been negotiated between the Government and some of its own enterprises have included specific target rates of growth of total factor productivity to be achieved.⁴ In Eastern Europe, national plans have also specified objectives of growth of total factor productivity at the sectoral but not at the enterprise level. In developing countries, studies of the growth of total factor productivity even at the industry level have been sparse, possibly because of inadequate data and the difficulties involved in measuring output and inputs. Some resources should therefore be allocated towards remedying these deficiencies.

It has been argued that three criteria should be applied in assessing public enterprise performance: financial profitability, which addresses government concern over budgetary limits, even though it may not reflect the net economic contribution of the enterprise; economic surplus, which corrects for major distortions in actual prices and costs of non-commercial objectives, and thus reflects the true economic contribution of public enterprise commercial operations; finally, the rate of change in total factor productivity, which measures the degree to which resources are used with greater efficiency.

As has been pointed out, the difficulties in measuring these indicators are by no means negligible; but even if they can be resolved, the question remains how to judge whether public enterprise operations have been successful. One of two methods may be used. The first is to compare public enterprise performance to that of private firms operating in the same industry. This method is not, however, valid with regard to financial profitability, since public enterprise is not supposed to act to maximize financial profits, nor with regard to economic profitability owing to lack of information on the performance of

⁴William Keyser, "State business: public enterprise experience in the EEC", Final Report prepared for the Statsforetag Enquiry of the Swedish Department of Industry (Stockholm, August 1978).

private firms. This method can therefore be applied only to the factor-productivity criterion. The second method consists in evaluating public enterprise against its own previous record. It is a better method in that it takes account of the specificity of each enterprise with regard to its learning and growth experience. Regardless of the method used, performance evaluation is, however, worthless unless it serves to induce improvements. This could be achieved only if the objectives thrust upon public enterprise are unambiguously stipulated, the criteria involved are internalized by it, and if both Government and enterprise have an understanding of the costs involved.

Treatment of socio-economic objectives

One important ingredient of good performance is an unambiguous definition by the Government of the objectives public enterprise is expected to pursue. Managers frequently complain of the lack of consistency and of vagueness with which objectives are formulated by Government. This vagueness may account for the frequent interference of various central government departments, regional authorities and local authorities in public enterprise's day-to-day operations. In the absence of clear guidelines, set by the Government after consultation with the enterprise involved, the manager may yield to external demands. The labour department may pressure it to expand employment, local authorities to expand its operations in their respective regions etc. Large costs may be incurred in satisfying these demands, which makes it difficult to evaluate the performance of public enterprise with regard to its commercial operations. If subsidies are required to cover shortfalls in financial profit from some normal level or more often deficits, it would then not be clear to what extent they are justified by the cost of external demands and to what extent they result from inefficient operations.

To induce good performance, it is therefore important that public enterprise not be continuously subjected to external demands. The Government must define *ex ante*, and as clearly as possible, the targets to be reached and the amount of resources it is willing to allocate towards attaining them. This task requires, of course, the collaboration of enterprise managers, since they hold most of the needed information. Failure would most likely ensue if the Government defines targets unilaterally and then hands them down to the managers hierarchically, with no prior consultation. The negotiation process ought to lead to some consistency in formulating objectives and help the Government define its desired trade-offs.

It is during this process that the performance record of the enterprise should be the most valuable. The Government must, of course, first set its objectives and assess its financial needs and resources. Based on its own previous record, each public enterprise is then assigned some targets, both commercial and socio-economic. The enterprise concerned should then try to assess both the feasibility and the costs of achieving these targets and report the assessment back to the appropriate government agency or department. The costs may cover capital needs, operating deficits and non-commercially warranted undertakings. Costs of the latter should be assessed separately from those of commercial operations. As previously argued, this is needed to

measure the effect of fulfilling social targets on the enterprise's financial state and also to assess the net economic contribution of its commercial activities.

Based on the costs submitted and their effect on the Government's budget, the targets are revised and recommunicated to public enterprise managers. This iterative process should go on until agreement on targets and required costs has been reached. Through this process and given its limited financial resources, the Government will be faced with the choice among trade-offs. If, for instance, the cost of maintaining employment in a public enterprise faced with structural problems is too high, then it may reorient its policy towards job creation in another public enterprise or in the private sector; if the incremental cost of locating a plant in a backward area is too high, then it may opt for a more favourable location. Such improvements in project selection and in decision-making are possible only if a process similar to the iterative process described above is applied.

There are, however, some difficulties that have to be resolved for such a process to produce the best results. First, the Government may not be able to quantify the social benefits attached to a given socio-economic undertaking. Take the example of locating a plant in a backward region. The positive externalities that the new plant may generate in this region may be uncertain. Although it is important for the Government to try to assess these benefits, they should not be included in the assessment of economic surplus.⁵ Other benefits such as maintaining a high level of employment or training workers may be reflected in economic evaluation, carried out at accounting prices. Their financial costs should, however, be treated separately to determine their impact on the enterprise's financial position.

Performance with regard to non-commercial goals should therefore be evaluated on a cost-efficiency basis. Problems arise, however, when trying to assess these costs.

First, there is the problem of how to assess joint costs. Many administrative costs are likely to be of this nature. Some machinery may also be used both to produce manufactured goods and to train young workers who may later leave the public enterprise involved to work in other firms. The allocation of these joint costs between commercial activities and specific socially oriented operations is likely to be a difficult task for public enterprise, let alone Government. But comprehensive performance evaluation may induce the enterprise to divide these costs objectively and reveal its best estimate of the share of social objectives assigned to the Government. The reason is that it would look cost-efficient with regard to these objectives if it overstates their share in joint costs, whereas it would show poorer financial or economic profitability if it understates it.

The second problem is how to assess the cost of a given socio-economic objective in such a way as not to distort true performance with regard to other objectives. The Government should not, of course, base its decision-making exclusively on the information conveyed to it by public enterprise. Some independent source of information would be useful.

⁵R. Mallon, "Performance evaluation and compensation of the social burdens of public enterprise in LDCs", Discussion Paper No. 116 (Cambridge, Harvard Institute of International Development, April 1981).

Apart from assessing the costs of social objectives, there is the issue of whether public enterprises should be compensated for the costs incurred in achieving them. Most economists have argued that actual compensation is needed if any meaning is to be attached to the evaluation of financial or even economic performance with regard to commercial operations. This compensation could be effected either through the provision of subsidies to cover the incremental costs involved or through the allocation of an "endowment fund" that would serve as separate capital to be used for socio-economic objectives.

Compensation arrangements may be part of a contract that Government and enterprise agree on. This has been the case of the "contracts de programme" that the French Government included in the past with some of its own companies. The best known is the one arrived at with *Electricité de France* (EDF), the electric power company. EDF committed itself to fulfil certain targets over the period 1971 to 1975, which included, among others, an 8 per cent rate of return on investment, a 5 per cent increase in total factor productivity and defined social obligations. The Government took up specific commitments such as loan guarantees and actual compensation for socio-economic objectives. In the United Kingdom of Great Britain and Northern Ireland, similar contracts, called corporate plans, also stipulated actual compensation for the cost of non-commercial objectives.

Under these contractual arrangements, the Government deals with each public enterprise separately. This implies that it has dealt with trade-offs among objectives in the background. An interesting system that has evolved in Canada recently has the purpose of confronting both government departments and public enterprises with trade-offs. This system revolves around the so-called envelopes, which are cash limits imposed on broad expenditure categories.⁶ Capital or operating funds going to all public enterprises have to be drawn from the so-called economic development envelope. Each envelope comprises operating reserves that may be used only to cover cost overruns and policy reserves that are allocated to new programmes or to the expansion of old ones. Each envelope is run by an interdepartment committee called the policy committee.

Each demand on the envelope has to be debated and approved by this committee. Subsidies and loans to a public enterprise reduce the size of the envelope. Even the suggestion that the implicit cost of a loan guarantee should be taken out of the envelope is being seriously considered. The short experience with this system has not yet been systematically reviewed, but casual observation suggests that it has helped rationalize government outlays by forcing government departments and agencies to be confronted with trade-offs among projects and objectives and to be cost-conscious.

⁶See R. Mallon, "Policy and expenditure management system: envelope procedures and rules" (Ottawa, Canada, July 1980), for a detailed description of the system.

An approach to evaluating the performance of public industrial enterprises

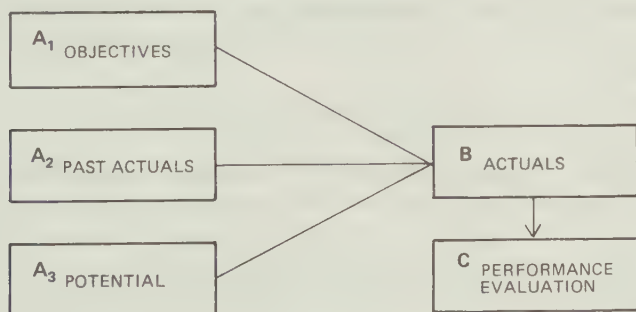
*Praxy Fernandes**

The evaluation of the performance of public enterprises is an issue that appears to be baffling policy-makers, planners and enterprise managers. The problem arises essentially from the duality of purpose of public enterprises and the complexity of their multi-dimensional goals. There are standard systems for evaluating the performance of a classical business enterprise. These are linked to efficiency and profitability. Clearly they are inadequate for evaluating public enterprises, and what is needed is a system of composite yardsticks to account for the intricate patterns of objectives set for public enterprises.

It is first necessary to understand the basic mechanics of performance evaluation. It is an exercise in comparison. It attempts to compare accomplishments with the goals. Or, alternatively, it attempts to compare what has been done in the current period with what has been achieved in the previous period. A third possibility is to compare what has been achieved to what might have been achieved. The three principal factors therefore that are involved in performance evaluation are:

- A: the determinants of comparison;
- B: actuals;
- C: evaluation.

In other words, performance evaluation is nothing but the relationship between factors A and B as indicated in the model below:



Thus we obtain three equations:

- $A_1 - B = \text{performance levels vis-à-vis targets}$
- $A_2 - B = \text{growth rate}$
- $A_3 - B = \text{productive efficiency vis-à-vis norms}$

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Whichever set of indicators is used for judging the performance of public enterprises, whether classical business indicators or socio-economic indicators, each of these three equations can be applied.

The primary condition for undertaking the evaluation, which is a comparative examination between two factors, is the clarity and accuracy of data on both sets of factors. Thus, in respect of factor A_1 , it is necessary to be clear about what the specific objectives are, the priority of each and whether the objectives are quantifiable. Similarly, for factor A_2 , it is necessary to have accurate and timely data about the actuals for the given past period. For factor A_3 , decisions regarding normative performance that express the optimum potentiality of the investments must be assessed in advance.

As a counterpart, there must be adequate data on factor B—the actuals. The figures must be accurate, and what is even more important, they must be timely. If performance evaluation is to be used as a managerial tool to improve performance and not as a means of fixing responsibility on “wrongdoers”, then clearly the flow of information on actual performance should be current.

Physical indicators

The starting point of an analysis of performance should be on physical yardsticks, which represent productive efficiency. The application of physical indicators is neutral regarding ownership and can thus be used equally by public or private enterprises; and it is neutral regarding social purpose, for it seeks to examine not the reason for the production or the policies on sales, marketing and social profitability, but purely the primary efficiency in the utilization of inputs converted into outputs.

Judging physical production in absolute terms (as is often done in developing countries) has little meaning for purposes of evaluation. The three equations need to be applied:

- (a) What is the actual production vis-à-vis the projected target? (The difference could reflect either the capability of meeting targets or the capability of fixing targets);
- (b) What is the production of the given year vis-à-vis the past year? (The change will show growth, stagnation or decline);
- (c) What is the actual production vis-à-vis the norms? (It is presumed that in fixing targets the potentiality by assessment of norms is taken into consideration.)

Since productive efficiency in effect represents the best use of inputs, the physical indicators of the contribution made by each of the inputs can be broken down. Thus:

Machine efficiency, which can be revealed by factors such as capacity utilization, percentage of downtime due to breakdowns, machine-hours required for given units of output;

Human efficiency, judged by factors such as the availability of the labour force during the year and losses due to absenteeism, strikes, lock-outs, or go-slows and man-hours required for a given unit of output;

Materials efficiency, which must bring out the factor of consumption coefficient, the amount of raw materials consumed for a given unit of output.

These physical indicators are stated only illustratively. Adequate literature on this subject exists, and it is not necessary to "re-invent the wheel". What is, however, necessary is to stress the importance of physical indicators because their validity cannot be shrouded in the fog of mystery that often surrounds socio-economic or other policies adopted by public enterprises. Indeed, the idea should be promoted that optimization in the achievement of physical indicators is by itself the first social responsibility of public enterprises.

Financial indicators

As in the case of physical indicators, the basic approach to financial indicators does not differ appreciably from public to private enterprise. The enterprise is now being measured by the classical yardsticks of business, the yardsticks that determine profitability. Financial profitability may be the result of productive efficiency as revealed by the physical indicators or may be the result of monopoly, protection and artificial pricing policies. It is therefore of the essence of the evaluation process to examine the financial performance in terms of the physical performance. It is entirely possible to have an excellent financial performance based on a poor physical performance, or vice versa, losses in an enterprise that shows high productive efficiency.

Among the standard yardsticks of financial performance are:

Return on capital;

Return on turnover;

Ratio of working capital to turnover;

Improvement, decline or stagnation in profitability over the past period;

Achievement of financial targets.

Here again, since there is ample literature on the subject, the basic financial indicators are only mentioned illustratively.

Marketing indicators

Goods and services are produced because they are to be marketed. Indeed, the financial performance is conditioned by both the productive efficiency and the marketing performance. The marketing indicators deserve special consideration because, unlike the physical and financial indicators, the marketing indicators are common to public and private enterprises in part but also differ in part.

The common denominators include:

Percentage share of the market;

Growth of sales;

Percentage of domestic sales to export sales;

Growth of export sales;

Unit value of sales.

Where they will differ, however, is the result of the pressure of social responsibilities on public enterprises. While social indicators will be dealt with separately, it would be useful to examine their relevance in the context of marketing. Among the important additional indicators are:

Reasonableness of prices (Are they stable, rising or falling?);

Improvement in the quality of products (Does quality meet private-sector and international standards?);

Percentage contribution to the production of basic consumption needs;

Contribution made to foreign exchange earnings;

Unit value of foreign exchange earnings to domestic earnings;

Consumer satisfaction.

To take the unit value of foreign exchange earnings, this analysis is of great interest to the domestic consumer. Is the enterprise earning more or less on the external markets on a given unit of production than it is earning on the domestic market? If it is earning more, the domestic consumer is clearly being given a fair deal. If, on the other hand, it is earning less, the domestic consumer is in fact subsidizing the foreign consumer.

The concept of consumer satisfaction is a qualitative concept. There are ways, however, of judging it, such as the increase or decrease of complaints, the reactions of the press or parliament, all of which reflect the credibility of the enterprise. The approach to consumer satisfaction in private enterprises is essentially to use it as a basis for promoting sales and increasing profits. In the case of public enterprises, consumer satisfaction, it is to be hoped, is an end in itself, constituting a very important social responsibility. The yardsticks for defining consumer satisfaction also vary from one enterprise to another. For example, in a city bus service, consumer satisfaction will depend on how regular the bus services are, whether buses are overcrowded or not and how clean they are, how courteous the operating staff is and whether safety practices are observed. In the case of a public-enterprise hotel, a whole range of factors such as the quality of food, the promptness of room service, cleanliness, infrastructural services such as telephones and standards of entertainment come into play.

What therefore emerges is that, unlike the physical and financial indicators, the factor of quality now begins to emerge, and each enterprise must develop its own approach to the idea of consumer satisfaction relevant to the nature of business it is engaged in.

Socio-economic indicators

A set of physical and financial indicators and perhaps even of marketing indicators can be drawn up without undue complications. To develop social indicators is something quite different. Very little contribution can be made to the current understanding of performance evaluation unless one can develop socio-economic indicators or at least provide a methodological framework within which these indicators can be worked out by each enterprise.

The starting point of this difficult exercise lies precisely in the statement of goals. If the social role the public enterprise is expected to play is not clearly stipulated, is not given a priority, and is not quantified, then the task of building up indicators to assess the achievement of social objectives becomes almost impossible.

To begin with, it should be recognized that there can be two sets of social objectives. The first is the broad statement of national objectives underlying the national developmental strategy. These objectives may or may not apply to particular public enterprises, or they may influence public enterprises in varying degrees. Nevertheless, whether they are stated as specific enterprise objectives or not, any contribution the enterprise makes to the achievement of the broad social aims must go to its credit. For example, the development of backward regions may be stated to be a broad national goal. Clearly, such a goal would be much more closely associated with a regional development corporation or an agro-industrial corporation than with a national airline. Nevertheless, a national airline can make a contribution to regional development, although not its primary aim, by providing means of communication between the backward area and the metropolitan area.

It is, however, the second set of objectives that is of more immediate concern here. This is the stipulated set of socio-economic objectives directly assigned to the particular enterprise and identified as such during the process of ascertaining its corporate identity. There cannot be any uniform set of social objectives for all public enterprises. The specific set of objectives applicable to a particular enterprise needs to be separately identified.

It becomes evident that an all-comprehensive set of social indicators cannot be provided. What one can certainly do, however, is to seek a methodology through illustrative cases of the manner in which social goals can be identified, quantified and converted into indicators of social performance.

The starting point of such a methodology is the identification of the broader set of national objectives. The report of the Expert Group Meeting on the Role of the Public Sector in the Industrialization of the Developing Countries, held at Vienna 14-18 May 1979 (ID/WG.298/15), contained the following list of national developmental objectives:

- To adopt a fully socialistic model of development;
- To control strategic sectors of the economy;
- To provide the requisite economic infrastructure;
- To control and manage the essential services;
- To control the commanding heights of the economy;
- To manage and control natural monopolies;
- To undertake tasks beyond the capability of private enterprise;
- To provide competition to private industry;
- To develop backward areas;
- To stimulate the advancement of weaker sections of society;
- To increase the availability of essential consumer goods;
- To generate employment;
- To develop technology;
- To generate foreign exchange earnings;

- To stimulate agricultural development;
- To commercialize activities traditionally run as government departments;
- To discourage the concentration of economic power;
- To utilize more fully economic resources;
- To control the exploitation of natural resources;
- To help stabilize prices;
- To take over the management of ailing private-sector firms;
- To develop self-reliance;
- To improve income distribution;
- To favour or accomplish structural change.

While this list is by no means comprehensive and while the expert group itself stated "Those objectives would differ from one developing country to another depending upon historical, political and socio-economic factors . . .", the list gives one the flavour of the manner in which national developmental objectives tend to be stated. Two impressions emerge from a study of such a list:

(a) The list ranges from broad, strategic, macro objectives to more precisely stated micro objectives. Thus, objectives such as "to adopt a fully socialist model of development" or "to favour or accomplish structural change" are clearly the kind of goals that can be worked for only at the national level. It would certainly be difficult for enterprises to attempt to reach such goals;

(b) The statement of goals tends to be painted with a broad brush and gives one the impression of ideological or political sloganeering.

It is entirely possible to incorporate social and national objectives within the corporate plans of public enterprises, linking their operational objectives to a specific system of performance evaluation based on social indicators. Steps that would need to be taken include:

- Restating the objective so that it is clearly related to operations of the enterprise;
- Disaggregating the possible elements of the broader objective;
- Quantifying targets wherever possible;
- Describing qualitative targets wherever quantification is not possible;
- Formulating a counterpart set of questions and yardsticks of evaluation based on such disaggregation.

What is of cardinal importance is that the claim to be achieving social objectives should not be put forth as an afterthought (sometimes offered as an alibi for poor physical and financial performance), but should be a target consciously adopted. Similarly, the questions and yardsticks to be asked at the time of evaluation should be an intrinsic part of the initial process of clarifying the objectives.

To illustrate this methodology, three cases of incorporating national social objectives in corporate plans are presented below. The national objectives are:

- To develop technological self-reliance;
- To develop backward regions;
- To promote the integration of women in development.

CASE 1

National objective

Statement of enterprise objectives incorporated in corporate plan

Disaggregation of specific components of the corporate objective:

1. Creating a research and development department.
2. Allocating adequate funds for research and development.
3. Developing technological skills through training programmes within the enterprise.
4. Sending managers or technicians for advanced training in technological development to outside institutions.
5. Developing trouble-shooting units on the shop floor.
6. Searching consciously for import substitution possibilities.
7. Examining the increased utilization of domestic raw materials.
8. Unpackaging of imported technology.
9. Utilizing fully domestic skills through subcontracting.
10. Fostering new ideas and methods of work to improve productivity.

To promote technological self-reliance.

While our enterprise will place high emphasis on increased production, improved productivity, reasonable prices and improved quality of our products, we recognize the broader national goal of achieving technological self-reliance. We therefore accept as a major objective the promotion of technological development through our enterprise, and we desire to make specific contributions to the country's pool of technological advancement.

Evaluation criteria:

1. Was a research and development department actually set up and how many persons are working in it?
2. What percentage of the enterprise's turnover has been allocated to research and development?
3. Which in-house training programmes for technological development have been introduced?
4. How many managers or technicians have been sent for advanced training outside?
5. What contributions have the trouble-shooting units made?
6. What are the specific contributions of the enterprise towards import substitution?
7. What research has been done on domestic raw materials and has it resulted in increased use of national resources and consequent reduction of imports?
8. Which technologies have been purchased from abroad and what is the manner in which they have been unpackaged?
9. What is the extent of use of local skills through subcontracting?
10. Have research and development produced some new ideas or methods?

CASE 2

National objective

Statement of enterprise objectives incorporated in corporate plan

Disaggregation of specific components of the corporate objective:

1. In selecting the location of our plants we will consciously give preference to location in backward regions.

2. While developing the infrastructure of supporting services needed by our plants, we will make available such services to the local region.

3. While promoting measures for the welfare of our workers, we will attempt to extend the facilities so created to the local region.

4. Through our plants established in backward regions we will generate employment for local persons.

To develop backward regions.

While the corporate objectives of our enterprise are essentially to provide consumer goods needed by the general public, we recognize the broader national objective of promoting the development of backward regions. We therefore accept as a corporate objective the task of making a specific contribution towards such regional development through our operations.

Evaluation criteria:

1. How many plants has the enterprise set up? Which of them are located in a backward region?

Are there any new investment proposals, and if so, are the proposed locations in a backward region?

2. What infrastructural supporting services have been set up—electric power, water supply, roads?

Are such infrastructural services used solely by the plants, or is the surplus being made available to the locality? Quantify the extent of electric power and water so provided. Are the roads being used for purposes other than that of plant operations?

3. What welfare services have been set up for workers—schools, hospitals, health centres, birth control clinics, crèches, entertainment? Are these facilities also being extended to persons of the locality?

Quantify the number of non-workers admitted to enterprise schools, hospitals, clinics etc.

4. How many jobs have been created by the establishment of the plant?

How many of these jobs have been filled by recruits from the local backward region and how many through "imported" labour?

5. We will consciously follow a policy of procuring supplies from the local region to generate income.

6. We will promote ancillary activities in small-scale industry around our plants in backward areas.

7. We will make positive efforts to prevent any adverse impact of our operations on the local area and exercise in particular vigilance in combating pollution.

8. We will take steps to improve the environment surrounding our plants.

9. We will maintain a lively contact with local authorities and extend managerial and technical support in solving local problems.

CASE 3

National objective

Statement of enterprise objectives incorporated in corporate plan

5. State the extent of supplies of raw materials and other inputs purchased by the plant.

State the specific amount of supplies procured from the backward region. Indicate percentage of supplies obtained from local region.

6. Have any ancillary small-scale industries been developed? How many? What is the employment and turnover generated through ancillaries?

7. Describe potential pollution dangers caused by the installation of your plant. Indicate specific anti-pollution measures taken and the cost incurred.

8. Describe what specific contributions your plant has made to the improvement of the surrounding environment.

Have you established any gardens, parks or play fields?

9. What is the relationship developed with local authorities? What specific contributions has the enterprise made to the solution of local problems?

To promote the integration of women in development.

The primary objectives of our enterprise are to produce and distribute electronic equipment and telecommunications. While devoting our primary attention to the building up of technological capability and high standards of production at economic cost, we are conscious of the broader national objective of integrating women into development. Our enterprise therefore proposes to make a conscious effort to contribute towards this national goal and to provide a model to other enterprises by using women as a useful input in our operations and as a necessary part of our human resources

Disaggregation of specific components of the corporate objective:

1. In our recruitment we will not practise any form of discrimination against women and will provide them equal opportunities for employment.

2. In our wage and remuneration policy there shall be no discriminatory practices, and we shall introduce a system of equal pay for equal work.

3. Taking note of the special responsibilities of women towards the family and children, we shall consciously provide special facilities to women to enable them to meet these responsibilities.

4. We will provide special training arrangements for women to upgrade their skills.

5. We shall encourage the advancement of women in our enterprise to higher levels of responsibility.

6. The enterprise will take keen interest in the welfare of the families of our workers outside working hours.

7. The enterprise will attempt to provide part-time employment wherever possible to women in the locality.

Evaluation criteria:

1. What is the total number of employees in the enterprise? What is the number of women employees and what percentage does it represent?

Has the recruitment of women during the past year raised the percentage of female employment?

2. Please confirm that wage scales and remuneration are identical for men and women and give satisfactory reasons where they are not.

What is the percentage of the wage bill paid to women, and what relationship does this percentage bear to their percentage of employment?

3. What are the special facilities created for women—crèches, special maternity hospitals, maternity leave conditions?

4. What are the specific training schemes designed for women?

What percentage of the in-house trainees are women?

Have any women been sent for external training?

5. How many women have been promoted to managerial ranks?

What is the highest position held by a woman in the enterprise?

6. Describe the enterprise's contribution to family welfare.

7. Describe efforts to provide part-time employment for women. How many?

How much does the enterprise spend for this purpose?

Conclusion

This paper has attempted to set out the basic parameters of an organized system of evaluating the performance of public industrial enterprises. At the cost of repetition, one must restate that the development of a performance

evaluation matrix is an exercise that must be undertaken separately for each enterprise in each developing country. Any attempt to construct a theoretical model and offer such a model for direct application would be doomed to failure.

Recent attempts have been made to evaluate socio-economic performance in balance-sheet terms, putting a price on it. One has to regard these attempts with some misgiving. While such an approach may appear to be a neat solution, the qualitative aspects of public industrial enterprises, especially those related to social aims, might be lost.

In the last analysis, the evaluation must seek to reflect the dualistic character of public enterprises and must account for their enterprise aspects and their public aspects.

Conflicting paradigms: the evaluation of public industrial enterprises as agents of national development

*Javed A. Ansari**

This paper reviews similarities and differences in the two main approaches to an evaluation of the impact of public industrial enterprises on national development within the third world. These approaches are here described as "neoclassical" and "neo-Kaleckian". Clearly, this is a simplistic, arbitrary and somewhat unsatisfactory classification.¹ The neoclassical approach may incorporate many elements of institutional and organizational analysis. The neo-Kaleckian studies may draw upon "pre-Kaleckian" themes emerging from the works of Lenin and others. However, on the basis of assumptions, analytical tools employed and policy recommendations, most studies of public enterprise may be classified as belonging to either the neoclassical or the neo-Kaleckian school. Differences between authors belonging to the same "school" are usually differences of emphasis. This is particularly true of the neoclassical school, which has recently addressed itself to the task of analysing the nature and the performance of public enterprises, largely in response to a rapid growth of public enterprises in both developed market economies and developing countries. The neo-Kaleckian approach, on the other hand, is the inheritor of an intellectual tradition that has long been concerned with an analysis of the nature of public enterprises and of the role they can play in achieving economic and social transformation. Thus the growth of public enterprises has not caught the neo-Kaleckian school unawares. It had been predicted by some authors within the Marxist tradition (Lenin [2], pp. 73-83). However, the nature of the modern public enterprise, particularly within the industrial sector, and its relationship with private business in both developed market economies and developing countries have not been the subject of analysis in the classical Marxist tradition. The neo-Kaleckian school addresses itself to these questions with a view to studying the role of public enterprises in different social settings.

Nature and motives of public industrial enterprises

The neoclassical and the neo-Kaleckian schools are divided in their analysis of the nature of public industrial enterprises and of the objectives these

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¹Further simplifying, one could speak of theories of capitalistic market competition and socialist central planning. It is recognized that other approaches to analysis of public manufacturing enterprises exist. To the author's knowledge, these approaches do not address the question of the role public manufacturing enterprises play in the economic transformation of developing countries. Modern neoclassical economics draws on the work of Alfred Marshall and other late-nineteenth-century English economists. The ideas of Kalecki, a major socialist economist, are developed in Kalecki [1].

enterprises seek to pursue. A "consensus definition" of a public industrial enterprise for the neoclassical school has been formulated as follows:

"A public industrial enterprise is an entity that meets the following criteria: (1) The Government is the principal stockholder in the enterprise or has the ability or potential to exercise control. (2) The enterprise is engaged in the production of goods and services for sale. (3) As a matter of policy, the revenues of the enterprise are supposed to have some relation to its cost" (Gillis [3], pp. 2-4).

The last criterion implies that public industrial enterprises are profit-seeking entities, although the quest for profit maximization may be constrained by what are described as "social objectives" assigned by the State to the enterprise.

The multiplicity of objectives pursued by the public industrial enterprise has generally been recognized by neoclassical authors.² It is argued, however, that success in achieving these objectives can be evaluated in terms of the impact of public enterprise performance on the level of economic welfare as conceived in conventional neoclassical theory. The establishment of public industrial enterprise is generally seen as an economically rational response by Government to persistent market failure in specific industrial branches. Indeed, Leroy Jones argues that "(neoclassical) theory provides not a defence of *laissez-faire* but a list of economically rational motives for its restraint" (Jones [5], p. 14). Since the assumptions underlying this theory are often violated in the modern world, it cannot be argued that government attempts at market regulation will necessarily result in a distribution of goods and services that is socially inferior to the distribution that would have emerged from the "free" interaction of market forces. Pareto optimality³ is attained only through the operation of a perfectly competitive market system. Public regulation is justified within the context of the neoclassical paradigm if there exist material or policy-induced monopoly conditions, substantial externalities, imperfect knowledge and/or incompetent management. Public regulation may also be justified if the concern is with the production of merit goods. When public authority intervenes in a market to offset these factors, neoclassical theory interprets it as acting to overcome barriers to Pareto optimality. It is also recognized that State intervention may augment welfare by changing the existing pattern of distribution of wealth or altering consumer tastes. Moreover, it is appreciated that correcting imperfections within a given market may entail intervention in a wide spectrum of related economic activities.

Public intervention may take a variety of forms. The neoclassical approach regards the establishment of public industrial entities to be of minor importance. "Public economics" has traditionally been concerned with the public provision of goods and services. Analyses of public-sector production have been few and far between. The main concern has been with the consumption impact of the production of what may be described as quasi-public goods. Neoclassical literature focuses on problems of efficient pricing and investment; and although this literature is ostensibly related to an

²Choksi [4], pp. 172-181, lists over 20 such objects.

³Pareto optimality occurs when it is not possible to make one person better off without making someone worse off.

evaluation of the performance of public enterprise, it rarely concentrates attention on the nature of the producing entity. Its overriding message is invariably that production of quasi-public goods (whether undertaken by private or public firms) should be geared to the objective of maximizing social welfare.⁴

In the event of the existence of market failures and where market imperfections cannot be eliminated by taxation and subsidization, the objective of maximizing social welfare can be addressed by public production: "In countries where stock markets and other institutional devices for dispersing private industrial ownership are not likely to exist and where, if they do, they are unlikely to be used by the bulk of the population, public ownership could be a feasible means for incremental asset redistribution" (Lal [7], p. 220). Similarly, inability to levy taxes or prohibitive administrative costs in the distribution of subsidies to consumers or private producers may make public enterprises more effective instruments for achieving "second-best" welfare solutions in developing countries.

Welfare levels can be augmented by public enterprise by a variety of pricing and investment strategies, not all of which imply profit maximization. Thus, if a public enterprise has been established to enhance price stability in a given market, to promote domestic production or to transfer income to a less privileged group, pricing and investment policies based on the objective of profit maximization would not be appropriate. They would not have an "optimum" impact on the level of social welfare. It has been argued that "distributive prices" should be determined outside the public-enterprise system and the enterprises should consider themselves constrained by the external environment (Jones [5], p. 144). Even if this view is accepted, the neoclassical school recognizes that public enterprise may deviate from the normal profit-maximizing behaviour of private firms⁵ in order to correct market distortions.⁶ These distortions may be specific to the market in which the public enterprise is producing, or they may be economy-wide distortions. Deviations may also occur as a result of the constraints—the distributive and "political" objectives—imposed upon the public enterprise by the external environment.

Jones has developed a classification scheme for the public enterprises of the Republic of Korea. One of his categories relates to public enterprises established to achieve "developmental motives". Public enterprises in this category have been established to offset a "constellation of market failures", including imperfect capital market and an unwillingness of the private sector to assume risks. They have been established to perform one of three functions: (a) to render entrepreneurial support; (b) to provide entrepreneurial substitution; or (c) to provide managerial substitution. Public enterprises in the last two categories are likely to contain the large majority of public industrial enterprises in developing countries.⁷ Jones argues that:

⁴For an outstanding example of this type of work, see Turvey [6].

⁵Whether private firms exhibit "profit-maximizing behaviour" is, of course, itself the subject of a major controversy. See, for example, Marris [8].

⁶These are described by Jones as "primary intended deviations (which usually) imply investment deviations but not operational deviations" by public enterprise ([5], p. 145).

⁷Entrepreneurial support agencies are identified as development banks, technical assistance agencies etc. (Jones [5], p. 148).

"Profit serves as an excellent first approximation to an operational goal for the entrepreneurial and managerial substitution categories. (Their) primary intended deviation (from the private enterprise behavioural norm) is existential; left to purely private initiative they would supposedly not operate at all. Intervention is intended only to achieve existence; therefore, their operational behaviour should not differ from that of private enterprises" (Jones [5], p. 157).

The large majority of neoclassical scholars regard public industrial enterprises as profit-seeking entities whose operation is constrained by external agents that assign distributive and "political" functions to these enterprises. They regard it as logical, therefore, to assess the performance of the public industrial enterprise in terms of its impact on the level of social welfare.

Welfare considerations are, however, not central to the work on public enterprises undertaken by the neo-Kaleckian school. Public enterprises, particularly public industrial enterprises, are seen as instruments capable of achieving a transition from a capitalist to a socialist economy. Seizing control of the "commanding heights" of an economy is an objective necessity according to this view if "production for profit" is to be replaced by "production for use". However, Kalecki argues that public enterprises play different roles under different types of regime. Their growth in developing countries is explained in Kalecki's view by the emergence and consolidation of "intermediate regimes"—i.e. political structures "where the lower middle class and the rich peasantry perform the role of the ruling class" (Kalecki [1], p. 30). To survive, these "intermediate regimes" need to limit the influence of foreign capital and the "comprador bourgeoisie". Public enterprises are an instrument for achieving "economic emancipation" and providing the entrepreneurial initiative for the rapid development that the domestic upper middle class is too weak to undertake. In such a situation, State capitalism concentrates investment on the expansion of the productive potential of the country. There is thus no danger of forcing the small firms out of business. Further, the rapid development creates executive and technical openings for ambitious young men of the "numerous ruling class" (Kalecki [1], pp. 32-33). State enterprises are thus seen as a means of consolidating the "intermediate regime" in the developing countries.

K. N. Raj [9] and Sobhan ([10], pp. 23-40) have extended Kalecki's work to examine the role public enterprises play within a given economy and the nature of the political regime that dominates it. Sobhan distinguishes between public enterprises that have emerged as a consequence of the withdrawal of the colonial power and those created as a result of changes in the "domestic balance of class forces". The second group of enterprises is perhaps more likely to emerge as a dominant force within the economy.⁸ If the transition of power has taken place from the colonial administration to the "national bourgeoisie" or to the "petty bourgeoisie", public enterprises are likely to remain important but subsidiary to private institutions (Sobhan [10], p. 28). In certain circumstances public enterprises may develop an identity of interests with foreign capital, as is illustrated by Evans ([11], pp. 43-64) in the case of Brazil. In the neo-Kaleckian view, public enterprise serves the interests of the dominant political forces. In the event of political instability when rival "class

⁸The author's interpretation of Sobhan [10], p. 26.

forces" are contending for State dominance, the performance of the public sector is likely to be seriously impaired. The neo-Kaleckian school contends that the public enterprise sector is likely to operate most effectively and efficiently under a "regime of the masses" (Sobhan [10], p. 29). In such a regime it becomes a primary instrument for mobilizing a surplus and for enhancing productive capacity. The performance of public enterprises may also be improved in a regime clearly dominated by the "national bourgeoisie". Under such a regime the improved performance of the public enterprise lowers cost within the economy and enables the private sector to increase profits. However:

"Both the established and aspirant bourgeoisie tend to develop a vested interest in the poor performance of public enterprises . . . for in a bourgeois-dominated regime an overly successful public sector may encourage the workers of these enterprises and even the managerial cadres to seek a more dominant role for public enterprises at the expense of the private sector" (Sobhan [10], p. 30).

The neo-Kaleckian school appears to recognize that there are forces at work in "bourgeois-dominated" regimes that frustrate possibilities for improvement in the performance of the public enterprise sector. An elimination of these constraints on public enterprise would endanger the political consensus that sustains the incumbent regime. One is therefore led to the conclusion that the neo-Kaleckian school regards the public enterprise sector as having the potential to serve as an instrument for achieving transition from the "bourgeois-dominated" regime to a regime "dominated by the masses".

In a "regime of the masses", public enterprises are enabled to "maximize surplus generation and its retention for expanding the productive forces" (Sobhan [10], p. 38). Assuming that prices obtaining within such an economy truly reflect social opportunity costs and benefits, public enterprises should be regarded as profit and growth maximizers in the "regime of the masses". In other words, in the "optimal" situation there is likely to be little significant difference in the neoclassical and neo-Kaleckian analysis of the nature and role of public enterprise. This apparent convergence of paradigms is, however, of little more than academic significance. Obviously there are important differences in the neoclassical and neo-Kaleckian conceptions of the "optimum" (Utopian) state. In the neoclassical vision this situation is approached when property-owning individuals voluntarily establish economic relationships in non-monopolistic markets. In the neo-Kaleckian world, economic freedom is sought to be guaranteed by the abolition of private property and the socialization of the means of production. Thus, movement towards the neoclassical optimum requires public enterprise to adopt pricing and investment policies that offset existing market "distortions", while movement towards the neo-Kaleckian optimum necessitates that public enterprises gear their activities towards augmenting the role of the State as the main (dominant) decision-taker within the national economy. In the neoclassical view, the role of public enterprise as a means of offsetting market distortions is best served if these enterprises plan production on the basis of social opportunity costs and benefits as reflected primarily in the pattern of international prices with which the national economy is confronted. The neo-Kaleckians, on the other hand, argue that

movement towards their optimum—"the regime of the masses"—implies that the public enterprises restructure the domestic economy in such a way that dependence on foreign capital is reduced. This difference in perspectives ensures that the two schools differ in their assessment of the impact of public enterprise in national development.

Assessment of impact on national development

Most work on assessing the impact of public-sector enterprises on the national economy within the neoclassical stream has been at the micro level. The main concern has been to analyse the investment and pricing behaviour of public corporations with a view to determining the impact of these policies on economic welfare.

Neoclassical appraisal of public enterprise is firmly rooted in welfare theory and is concerned primarily with the "optimum" provision of public goods and with an analysis of government intervention in the natural monopolies. This theoretical perspective necessitates that public ownership of manufacturing enterprises be regarded as one of several instruments that can be employed to attain at most a second-best social solution in which the net gains from the removal of the initial divergence between marginal social value and marginal social cost is offset by the loss caused by the creation of some other divergence. (Lal [7], pp. 219-220). Investment in public industrial enterprises is justified if it leads to a maximization of social welfare, where "social welfare" is taken to be a function of the consumption level of the citizens of a country over time and where the social value of commodities are measured in terms of border prices (prices of similar goods available outside the country). Non-traded and partially traded goods are also valued with reference to international price structures, and accounting prices of factors of production are evaluated in terms of uncommitted public income valued in terms of foreign exchange as well.

Substantial work has been done to develop appropriate criteria for evaluating the welfare impact of public enterprises.⁹ Thus, Jenkins suggests a number of adjustments to conventional accounting statements to render them appropriate for assessing the commercial performance of public enterprises (Jenkins [13], pp. 5-10). These adjustments permit the construction of cash-flow statements that can be used to identify sources of revenue, financial capability, liquidity problems etc., and to separate economic costs and benefits from flows that represent a mere transfer of funds between the enterprise and Government. These adjustments thus enable the analyst to move from a narrowly commercial to an economic appraisal of the performance of public enterprises.

Such an appraisal requires further that the impact of public investment be evaluated in terms of social opportunity costs. Social cost-benefit analysis retains the formal framework of present-value calculation, but recalculates factor prices (including the price of foreign exchange) in terms of the relative social scarcity of these factors. Public investment can thus be systematically geared to the task of correcting or offsetting market distortions and enhance both efficiency and equity.¹⁰

⁹See, for example, Roemer and Stern [12] and Jenkins [13].

¹⁰This approach is adopted by both UNIDO [14] and Little and Mirrlees [15].

Extensive criticisms of this approach have been presented.¹¹ First, the derivation of these shadow prices presupposes the simultaneous existence of an efficient output configuration. However, change in the output mix owing to the operation of projects selected on the basis of shadow prices that were correct for the original output programme will imply that a different set of shadow prices is now required to achieve efficient resource allocation. Moreover, as Bhaduri argues, there is "no guarantee that the national output configuration (on the basis of which correct shadow prices are being derived) has the required property of dynamic stability with respect to piecemeal use of shadow prices in selecting public projects" (Bhaduri [17], p. 13). In other words, the use of shadow prices, even when adequately corrected to take into account changing output mixes, does not guarantee that resource allocation patterns will gradually converge towards the (desired) efficient configuration of national output. Such a convergence can be shown to exist only if it is assumed that the problem of effective demand is of no consequence as far as developing countries are concerned, i.e. that government intervention through the systematic use of a given project selection criterion will not influence the level and composition of public investment, and this will not, in turn, have an impact on effective demand through the (Keynesian) multiplier mechanism.

Another important criticism of social cost-benefit analysis is that its use does not permit the analyst to take into account the qualitative differences in the output stream of different economic projects. Selecting between a factory producing firearms and a factory producing wearing apparel in terms of the standard categories of social cost-benefit analysis obscures the profound qualitative difference in these two output streams. It also obscures the place each unit of production may have within a comprehensive integrated investment scheme. To integrate social cost-benefit analysis into a framework of national economic planning, a deliberate choice as to the desired physical composition of national output must be made. Social cost-benefit analysis relies on world market prices as indicators of the pattern of resource allocation that will permit a developing country to maximize the net flow of consumption from a given unit of investment over a specified period (Little and Mirrlees [15]). The prices represent to the country concerned the opportunity cost of obtaining any given product. However, as Lall and Streeten have pointed out: "The relative values of these products represent the demand patterns and preferences of the developed countries and the technological and marketing patterns of the large oligopolists which dominate production there" (Lall and Streeten [18], p. 186). Since price formation in oligopolistic markets is strongly influenced by bargaining processes, there is a strong temptation to use policy mechanisms for exerting pressure to influence price formation. Moreover, articulation of preferences in developing countries is affected by forces at work in the international economy, and Governments of developing countries are by sheer force of circumstance compelled to seek to modify the impact of these forces on the pattern of resource allocation within national economies. Thus, it is the desire to modify individual preferences—to make them conform to Government's own perception of the country's social needs—that lies at the root of most attempts at economic intervention by third world Governments.

¹¹See, for example, Streeten and Stewart [16] and Bhaduri [17].

The problem of reordering preferences is not adequately addressed within the context of the neoclassical approach. This approach is based upon an ideological perspective that assumes that the individual's attempt at maximizing his own welfare provides the economist with a knowledge of correct social preferences. It is these preferences that "ought" to be fulfilled. The optimization of social welfare can be achieved through the satisfaction of these preferences. The process of formation or articulation of these preferences is not regarded as an appropriate area for economic analysis, nor does economic analysis concern itself with assessing the extent to which the satisfaction of different preferences will increase social welfare.¹² This liberal philosophy, and its implied theory of the State and of the role of the Government in society, which underlies welfare economics, is thus an inadequate point of departure if one is concerned with explicating an economic strategy that attaches priority to satisfying basic needs, to achieving economic self-reliance or even to creating a better pattern of income distribution. In the neoclassical approach all these objectives may be regarded as economically irrational, since their pursuit may lead to a pattern of investment allocation that is "suboptimal" in welfare terms in the sense that it does not maximize the flow of consumption over a given period.

Some neoclassical authors have recognized that "microeconomic efficiency evaluation (of the public industrial sector) can be meaningfully considered in the context set by national goals, alternative public policy tools and the constraints imposed by the governmental control structure" (Jones [5], p. 2). Evaluations at a sectoral level¹³ have concentrated on analysing the impact of the public industrial sector on the level of economic growth, the rate of surplus mobilization, employment generation and export expansion. Attempts have also been made to assess the role of the public industrial sector in increasing domestic economic integration through fostering interindustrial linkages and in modifying output and factor market structures. It will be readily seen that although questions concerning efficiency cannot directly be addressed within such an analytical framework,¹⁴ its use does not imply an abandonment of the basic conceptual tools of welfare analysis. Private enterprise can at a sectoral level be similarly analysed; a comparison of the impact of public- and private-sector performance on the rate of growth of gross domestic product will yield the relative contribution these sectors make towards an expansion of economic welfare.

The neo-Kaleckian school formally dissociates itself from welfare analysis. It rejects the assumption that the individual consumer is a free and rational being who seeks utility maximization in perfectly competitive situations. It views society as an amalgam of conflicting forces. Public enterprises are not an instrument for correcting market failure but a vehicle for reconciling differences in social opportunities, goals and strategies of the various interest groups of which society is composed. In this perspective, "public enterprises are tools of public policy which serves the purpose of the attainment of collective goals, as defined primarily by the dominant social forces" (Ahmad [20], p. 67). This would suggest that neo-Kaleckian analysis of the impact of public industrial

¹²For qualifications to this statement, see Stilwell [19].

¹³The most outstanding example is Jones's study of the Republic of Korea [5].

¹⁴Jones, for example, does not present any efficiency analysis but maintains that his work is specifically structured to provide the preconditions for such evaluation ([5], p. 2).

enterprises should concentrate on assessing the role of this sector in strengthening the political and economic dominance of a given interest group set within a social formation. The economic strategies of different groups can be distinguished in terms of the desired changes in the composition of national output. Thus, emphasis on the restructuring of production in accordance with a country's international comparative advantage has traditionally been regarded as a development strategy that consolidates the position of private business and industry within the national economy. As against this, emphasis on the achievement of economic self-reliance has traditionally strengthened the hand of the public-sector bureaucracy as an economic decision-maker. It may, thus, be feasible to take the sectoral targets of a development plan as rough indicators of the group preferences of the dominant social forces within a country and to ask which investment strategy is likely to lead to the achievement of these targets in the different production sectors at the minimum cost. Socialist economic analysis has popularized the use of the "recoupment period criterion" as a means of evaluating different investment variants for producing a given output (Nove and Zauberman [21], pp. 73-89). Assume two methods (technologies) of producing the same amount of steel. Method 1 involves the construction of a huge blast furnace. Method 2 requires the establishment of a number of "backyard" operations of the type popular in China during the 1960s. Assume that the total capital cost of method 1 is \$10 million and that of method 2 is \$1 million. Furthermore, assume that the annual operating cost of method 1 is less by \$0.2 million than that of method 2. Then it would take no less than 45 years to recoup the additional cost of \$9 million in setting up the more investment-intensive project. If, however, the difference in the annual operating cost of methods 1 and 2 were \$2 million, the required recoupment period would have been only 4.5 years. It is to be emphasized that the recoupment period criterion assesses the choice of an efficient (i.e. cost-minimizing) technology for producing a given output. Social cost-benefit analysis, on the other hand, uses international prices as a reference point for determining what bundle of output a country can most efficiently produce in order to maximize welfare.

The use of the recoupment period criterion is widespread in the analysis of public-sector enterprises in centrally planned economies. Neo-Kaleckian studies concerned with developing countries do not usually undertake detailed micro-level investigations and therefore the recoupment period criterion is less frequently employed. Neo-Kaleckian work is usually concerned with an evaluation of the macro impact of the growth of the public industrial sector. Interest is focused on the role of this sector as a stimulant for increasing domestic economic integration (particularly linkages with the agricultural sector); as a supplier of products to meet basic needs; as a contributor to foreign exchange earnings; and as a promoter of national self-reliance.¹⁵ The performance evaluation criteria employed by neo-Kaleckian studies are not very different from those used by neoclassical authors; however, the conclusions drawn are, of course, quite dissimilar. It will be evident that this disagreement originates from a difference in the opinion of authors belonging to the two schools about the role the public sector can and should play in sustaining national development.

¹⁵See, for example, Ahmad [20], pp. 29-45.

This difference can be seen most graphically by contrasting Leroy Jones's study of the Republic of Korea¹⁶ with Sobhan and Ahmad's study of Bangladesh (Sobhan and Ahmad [22]). It has been seen that Jones is primarily concerned with evaluating the extent to which the public sector has been an effective instrument for correcting market failures. These market imperfections limit the achievement of national political and economic goals. The growth of the public sector in the Republic of Korea is explained primarily by its ability to correct these market failures and contribute towards the achievement of the national goals derived from the "philosophy" of Park Chung Hee. This philosophy is discussed at some length by Jones (Jones [5], pp. 133-139), who argues that it explains both the growth of the public sector and the restraints placed upon it. This philosophy requires that "market frustrations be overcome by selective and pragmatic applications of the public enterprise tool" (Jones [5], p. 139).

Contrast this with Sobhan and Ahmad's analysis of public industrial enterprise in Bangladesh. Ideals and social philosophy play a minor part as factors explaining public-sector growth and performance. "Mujibism"¹⁷ is not mentioned, and emphasis is clearly centred on the interplay of material class interests as determinants of the role of the public sector in the national economy. The class background of Mujibur Rahman is described (Sobhan and Ahmad [22], p. 577) and the policy of the Government and the leading party, the Awami League, is perceived as being strongly influenced by their changing "class" composition (Sobhan and Ahmad [22], p. 568). "Class contradictions" within the Awami League regime are seen as the main constraints on public-sector performance; and the extensive review of management, pricing, financial and labour policies of public enterprises is undertaken to show how these policies serve as instruments for "surplus extraction and appropriation" by the dominant social "classes". In Sobhan and Ahmad's view:

"Public enterprise in Bangladesh can only realise its full potential as a source of surplus generation to be used as an engine of growth when the contradictions which have constrained its performance are effectively resolved. Such a state of affairs can only come about when the anti-bourgeois premise of policy towards public enterprise can be aligned to the changed character of a state based on the masses" (Sobhan and Ahmad [22], p. 581).

It may be concluded that evaluation of the impact of public-sector performance on national development involves an assessment of its contribution towards the overcoming of market distortions in the pursuit of the economic objectives embodied in the social philosophy of "second generation third world leaders" (Jones [5], p. 138) in the view of the neoclassical school. As far as the neo-Kaleckian school is concerned, evaluation of public-sector enterprise involves an assessment of its role in achieving a transition from the "bourgeois state" to a "state of the masses" (Sobhan and Ahmad [22], pp. 18-19 and p. 568). There are many ambiguities in these two positions, some of which are addressed in the final section of this paper.

¹⁶Discussed previously.

¹⁷The social philosophy of Sheikh Mujibur Rahman, the first President of Bangladesh.

The unasked questions

It is, of course, easy to construct indices measuring the public industrial sector's contribution to gross capital formation (primitive socialist accumulation), employment and the achievement of distributional objectives. Both neoclassical and neo-Kaleckian studies present such evidence.¹⁸ But an overall evaluation of this evidence can be attempted only within the context of the respective theoretical paradigms. As far as the neoclassical school is concerned, this involves assessing the contribution that public industrial enterprises make to improved economic efficiency, with international prices taken to be the relevant yardstick for measuring the degree of economic efficiency. However, as has been pointed out earlier, existing international prices are themselves distorted to the extent that international markets are oligopolistically structured. Moreover, existing international prices are based on a pattern of international income distribution unacceptable to most members of the developing world, and the explicit intention of the supporters of the demands for a new international economic order is to change the *status quo* reflected in the existing structure of international prices. The achievement of Pareto optimality on the basis of the existing pattern of international income distribution is not an economic objective of most developing country Governments. Few developing countries have evidenced a desire to accept the discipline of existing international prices and postpone investment in industrial branches they regard as important but in which they do not have an international comparative advantage. Often public enterprises have been an instrument for creating a competitive position in international and regional markets. During the period 1830-1870, Germany followed a policy of using State economic initiative to foster German industrial competitiveness in a wide range of international markets (Milward and Saul [25]). The development of the petrochemical industry in Brazil during the 1960s and 1970s may be cited as another example of an attempt to use public enterprise for penetrating foreign markets (Evans [11], pp. 43-64). Moreover, even within a closed-economy model it would be unrealistic to assume that public enterprises are instruments for achieving a Pareto-optimal distribution of resources because the existing pattern of income distribution within the national economy is not regarded as desirable or acceptable. As pointed out earlier, neoclassical scholars recognize that Pareto efficiency may not be a motive for the operation of public enterprise as long as the pattern of wealth distribution is considered not the best. Writing of the experience of the centrally planned economies, Jones notes:

"In the Soviet Union and in most East European countries it is not unreasonable to view the system within the [neoclassical] economic framework specified above: i.e. there is an initial redistribution of wealth from the individual to the state but thereafter control is exercised by the appointees of the owner of capital in a familiar fashion" (Jones [5], p. 15).

In other words, whereas the conventional efficiency criteria are relevant for evaluating the performance of public industrial enterprise, in the Soviet Union they would not be relevant for assessing their impact on national development

¹⁸See, for example, Gillis [23], Ahmad [20] and Szentes [24].

during the period of the New Economic Policy, the great industrialization debate or the years of the first and second five-year plans, when wealth was being "redistributed" from the individual to the State. If this interpretation is accepted, it would mean that the neoclassical school implicitly admits the irrelevance of the efficiency criteria in evaluating the impact of public-sector enterprise on national development as far as most developing countries are concerned. There are very few developing countries that would admit that the desired "redistribution of wealth from the individual to the state" has already been achieved.¹⁹ In most of these countries the redistribution of wealth and power is an important concern of Government, and public enterprises are an essential instrument for achieving this redistribution. An assessment of the performance of public enterprises is complicated by the fact that their economic operations are inextricably intertwined with political initiatives that are taken in order to mediate between social forces that seek control of a given socio-political structure. It might therefore be suggested that an evaluation of the developmental impact of public enterprise in (say) the Republic of Korea is incomplete if it does not include an evaluation of the performance of these entities in terms of the stability of the economic system created by Park Chung Hee and the extent to which their operation facilitates the consolidation of economic and political power in the hands of the regime that created them in the first place.

These questions can more appropriately be addressed within the context of the neo-Kaleckian perspective, which explicitly seeks to relate public-sector performance to the nature of the national policy. The major work in this school, however, contents itself with an analysis of the impact of the nature of the regime on public-sector performance. The question of the role the public sector played in sustaining the regime—in creating conditions of economic and political stability—is not explicitly addressed. The public sector is regarded as a passive agent responding to changes in the balance of forces within the "intermediate" regime. In this view "contradictions within the intermediate regime are likely to be more manifest in countries with a very low level of development" (Sobhan and Ahmad [22], p. 13). In such countries the public sector becomes "a hapless victim" of the "numerous petty bourgeois class" which has an "insatiable appetite" for appropriation of the surplus. In such circumstances the public sector is an object of exploitation for everyone. It keeps going but does not flourish (Sobhan and Ahmad [22], p. 18). Accordingly, "public enterprise in Bangladesh must await the basic process of social transformation demanded by the objective conditions of Bangladesh before it comes to full flower" (Sobhan and Ahmad [22], p. 571). Sobhan and Ahmad promise to "define the social parameters of Bangladesh following such a transformation and the nature of institutions and policies for public enterprise necessary to make it fully productive" (Sobhan and Ahmad [22], p. 571) but admit that such an exercise would be merely "academic because it cannot take into account the dynamics of the entire process of social transformation" (Sobhan and Ahmad [22], p. 561). The crucial question is: what role can public enterprise play in facilitating this "process of social

¹⁹Even the USSR describes itself as a "state of developed socialism" (see Khachaturov [26], pp. 13-27). It does not claim to have achieved "full communism" and therefore does not claim to have achieved the desired pattern of wealth distribution.

transformation", one aspect of which may be an enhancement of the productive potential of the national economy? Marx and Engels—precursors of the neo-Kaleckian school—have seen public enterprise as emerging from contradictions within capitalist social formations, but they have also prophesied that public enterprise would be an instrument for achieving a transition to what they describe as a "higher stage of production". Thus, in "Anti dhuring", Engels writes:

"The modern State . . . is essentially a capitalist machine . . . The more it proceeds to the taking over of productive forces the more does it actually become the national capitalist . . . The capitalist relation is not done away with. It is rather brought to a head. But brought to a head it topples over. State ownership of the productive forces is not the solution of the conflict but concealed within it are the technical conditions that form the elements of that solution. This solution can only consist in the harmonization of the modes of production, appropriation and exchange with the socialized character of the means of production." (Engels [27], p. 259).

An analysis of this statement would suggest that in the opinion of Engels:

- (a) State ownership emerges naturally in mature capitalist societies; and
- (b) State ownership is a means of achieving systemic transformation.²⁰

The neo-Kaleckian school elaborates the first proposition and argues that State ownership can emerge not only in mature capitalist society but also in social formations dominated by intermediate regimes. The second proposition has not been taken up so far for analysis or evaluation.

It is, however, essential to focus upon this second question if the neo-Kaleckian perspective is to provide a framework for assessing the impact of public enterprise in national development. There is a need to delineate public property from non-public property clearly. It is necessary to ask: in what sense does the creation and functioning of public enterprises affect property rights within a society, that is, "the sanctioned behavioural relations among men that arise from the existence of things and pertain to their use" (Furbotn and Pejovitch [28], p. 1131). It is particularly pertinent to deal with this question in the context of the managerial revolution, which has effectively separated ownership from control and created a private-sector bureaucracy capable of integrating a wide spectrum of production and financing activities and thus of imposing its will on many commodity and factor markets. Without a clear differentiation between the nature of public and private enterprise in the context of the socio-economic realities of the late twentieth century, the role and functions of the public sector cannot be identified.

Such a differentiation cannot, however, be made without directly addressing the question: where is the "regime of the masses" to be found? In the Republic of Korea? In India? In China? In the Libyan Arab Jamahiriya? In the Islamic Republic of Iran? What, in other words, are the desired "behavioural relations among men that arise from the existence of things and pertain to their use?" The

²⁰Thus Engels writes: "Whilst the capitalist mode of production more and more completely transforms the majority of the population into proletarians . . . whilst it forces on more and more the transformation of the vast means of production already socialized into state property it shows itself the way to accomplishing revolution" (Engels [27], p. 261).

elaboration of a neo-Kaleckian consensus on the desired form of property relations can serve as a basis for assessing the contribution public enterprise can make in facilitating a transition from the existing to the "optimal" structure of property rights. The impact of the performance of public enterprise on the national economy can then be studied within a social context, and its ability to economically sustain "intermediate" regimes and create a momentum for accelerated social transformation can be assessed.

All in all a number of questions are not adequately considered by both neoclassical and neo-Kaleckian scholars. A theoretical perspective is needed that takes into account on the one hand the complex interplay of political and economic forces that determine the performance of public-sector enterprise and on the other permits an evaluation of its contribution (a) to reordering of preferences; (b) to the enhancement of national and international bargaining power; and (c) to the sustaining of specific political formations.

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Note on control structures and efficiency in the public industrial sector: reflections based on the case of Pakistan

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The major consideration for changing the corporate status of public enterprises from departmental agencies to joint-stock companies has been the need to provide greater autonomy in decision-making. However, the greater legal autonomy given to public enterprises has not resulted in a greater functional autonomy for such enterprises. In fact, the power delegated by the Government according to the formal control structure is taken away through the requirement that they adhere to administrative instructions and government guidelines. The effect of changing the corporate structure with the objective of allowing greater freedom to managers is thus vitiated; nor is this effect entirely unintended. There continues to be an element of mistrust between the government controlling agency and the management of public enterprises, and the Government becomes suspicious of any attempt on the part of the management to act independently. Such attempts are frequently suspected of being "empire building" to further the personal prestige of individual executives. While the suspicion is not always baseless, this attitude, instead of making the control effective, merely succeeds in hampering the efficient working of public enterprises.

The inefficiency and ineffectiveness of the control structure is largely explained by the weakness in the machinery for operating public enterprises. The following are the important components of the operating mechanisms required for effective management:

(a) Management information system. A good information system is a requisite for the effective functioning of a decentralized organization structure. In devising a management information system, it has to be decided what information is required, the frequency with which it is required and who needs it, all of which, in turn, is determined by the purpose for which the information is required;

(b) Management control system. The purpose of a management control system is to achieve planned objectives as effectively and efficiently as possible within the framework of the organization and the available physical facilities. Budgetary control is an important part of management control. Budget targets must, therefore, be realistically set and divergence carefully analysed to evaluate performance;

(c) Evaluation system. The evaluation system requires that a multiple factor evaluation guide be established for each corporation, including such

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items as return on investment, profitability, production and sales, utilization of capacity, labour productivity, labour-management harmony and inventory turnover. Where non-commercial or social objectives have influenced a corporation's decisions, these should be taken into consideration in evaluating management's performance;

(d) Incentive system. The managers and workers in the nationalized industries have to be motivated as in the private sector. This is a critical variable in effective management. The incentive system has to be linked to the evaluation system. The managers should know what they are being evaluated against and the system of rewards or punishment associated with the evaluation system. If a proper incentive system can be introduced, there is no reason to believe that motivation will be any less in the public sector than in the private sector.

(e) Communication system. A proper communication system is vital for the success of any large organization. Both upward and downward communication is necessary to permit those working in the organization to develop a sense of participation, which in itself can be a powerful motivating force. If employees realize that their efforts are contributing to the national good a sense of patriotism can motivate. Thus, it is important to communicate to employees the goals of the organization, the reasons for setting these goals, the benefits to be derived from achieving these goals and the means of achieving them.

The control structure of the public enterprises in Pakistan includes only some of the elements of a management control and incentive system. However, the control structure does not incorporate the other essential components of the operating mechanisms. This inevitably creates a void in the implementation of the control structure leading to uncertainty on the part of the management and suspicion on the part of the controlling agencies. Thus, the lack of an effective management information system makes it impossible to operate the various instruments of control. Managers do not know exactly on what basis their performance will be evaluated. In addition, there is no reward (motivation) system linked to performance and evaluation. However, even if there were a well-designed evaluation system, it would remain purposeless in the absence of an effective information system. It is evident, therefore, that the operating mechanisms can function effectively only if all the essential components have been fully incorporated into the system.

The effect of the rigid control structure and lack of effective operating mechanisms is to extend bureaucracy to public enterprises themselves. Consequently, most decisions, even those at the enterprise level, are rarely taken in the entrepreneurial spirit. This atmosphere is not at all conducive to the exercise of any initiative in public enterprises. The managers are averse to taking risks and do not make serious attempts to minimize costs. With price commonly determined elsewhere and output mix and quantity constrained by the existing equipment, managerial discretion can make itself felt primarily in the realm of cutting costs. But given the employment structure of public enterprises, the first costs to cut are labour costs. This, however, is virtually impossible because of the emphasis on a fair deal to workers and harmonious labour-management relations. Moreover, since salaries and benefits in most

public enterprises are in no way related to performance, there is virtually no incentive to cut costs. Therefore, it can be concluded that while most managers of public enterprises in Pakistan are competent and experienced professionals, the effective signals given by the control structure in the absence of the operating mechanisms do not stimulate cost-efficiency or encourage public enterprises to act as dynamic agents of development.

The role of the public sector in the industrialization of African developing countries

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One of the most distinctive features of post-independence Africa has been the growth in importance of public enterprises in the productive structures of its economies. Colonialism itself laid the foundation, for although colonial administrations did not generally invest directly in agriculture and industry, they participated actively in distribution—through marketing boards and the like—and other service activities. More important, they viewed the central Government as the most important agent of change and economic progress. Far from being *laissez-faire*, as is sometimes supposed, colonialism was highly interventionist. It was thus a simple step further for the leaders of the newly independent States to extend the realm of the State to mining, manufacturing and agriculture, both through the acquisition of previously foreign-owned concerns and through investments in newly created State enterprises.

By no means was this movement confined to Governments that in some serious sense described themselves as socialist. In varying degrees, it has been a near-universal tendency. Specific examples will be given shortly; suffice it here to give the example of Kenya. Kenya is generally regarded as having a pro-market, private-enterprise orientation, yet its national accounts reveal the total public sector to have contributed 22 per cent of GDP in 1977, and State investments are widely dispersed through the industrial sector.

The efficiency of the public sector, and of State industry, has thus become a matter of the greatest importance to the performance of the economies of Africa. The principal objective of this paper is to bring together as much evidence as is available on the performance of public enterprises and its determinants. The primary focus is on the manufacturing sector and upon wholly State-owned public enterprises. Mixed enterprises, where ownership is shared in varying proportions between the State and private (usually foreign) shareholders, will receive less attention, except as points of comparison with public enterprises.

The case materials

This paper is based upon case material drawn from four countries of sub-Saharan Africa: Ghana, Senegal, United Republic of Tanzania and Zambia. These were, quite simply, the only countries about which a reasonable body of relevant information could be found.

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Even for these four countries the available information leaves much to be desired.¹ Much of it, especially on Ghana, is badly out of date. On Senegal, much of the data relates to public enterprises generally, and it has often not been possible to disaggregate the manufacturing enterprises from the general picture. On the United Republic of Tanzania, the data are subject to a variety of limitations. Moreover, for all four countries the information on performance of public enterprises is heavily skewed towards profit-and-loss statements, despite the serious limitations of such information for the purposes of economic evaluation.

Before the performance of public enterprise is evaluated, however, the nature of manufacturing public enterprises in each country and their importance in the respective national economies will be described briefly. The sources utilized in each case are set out in footnote 1.

Ghana

In Ghana, State participation in manufacturing dates back to the colonial period, during which time the Industrial Development Corporation (IDC) was set up to invest public money in industrial enterprises. Under the impulse of both the nationalism and the socialist rhetoric of the Nkrumah Government, the process was much accelerated during the first half of the 1960s, in parallel with a much wider expansion of State participation in the productive system. As can be seen from table 1, by 1966 (roughly the end of the Nkrumah period) wholly State-owned public enterprises accounted for nearly a fifth of total manufacturing output, with another eighth emanating from mixed enterprises. Although the proportions as between public enterprises and mixed enterprises had shifted by 1970, the combined share of the two was about the same as in 1966 (about a third of total manufacturing output) and well above the 1962 level. As a more general indicator of the increased role of the State, it was estimated that in March 1966 there were 53 State enterprises, 12 mixed enterprises and 23 public boards; for 1968, it was estimated that the public sector contributed 26 per cent of GDP. Although the Governments that have followed Nkrumah's have been avowedly more favourable to private enterprise and part-ownership, and a few minor public enterprises were sold to private owners in the late 1960s, new public enterprises have been added, so that the

¹To avoid frequent repetitious acknowledgements of sources we will at this point summarize the chief sources used for each country. The text of this paper is based heavily on the following publications, to whose authors we are greatly indebted:

Ghana: Tony Killick, *Development Economics in Action: A study of Economic Policies in Ghana* (London, Heinemann Educational Books, 1978), especially chapter 9. Tony Killick, "The state promotion of industry: the case of the Ghana Industrial Development Corporation", *Ghana Social Science Journal*, vol. 2, No. 1 (1972) and vol. 3, No. 1 (1976). *Senegal*: World Bank, "Senegal—the para-public sector report", Report No. 1619 a—SE, classified document (Washington, D.C., June 1977). *United Republic of Tanzania*: John Wilton, "The role of the public sector in Tanzania" (July 1981). A report specially prepared as background to the present study available separately. See this paper for detailed information on sources used. Kwan S. Kim, "Enterprise performances in the public and private sectors: Tanzania experience, 1970-1975", *Journal of Developing Areas*, 15 April 1981. *Zambia*: World Bank, "Zambia—the basic economic report, annex 2: the parastatal sector, Report No. 11586 b—ZA, classified document (Washington, D.C., October 1977).

Unless the contrary is stated, all the country tables and other information are taken from these sources.

Table 1. Ghana: manufacturing output by type of ownership, 1962 to 1970
(Percentage)

Type of ownership	Share of manufacturing		
	1962	1966	1970
<i>Ghanaian</i>			
Private	13.0	9.7	6.0
State	11.8	19.5	15.6
Total Ghanaian	24.8	29.2	21.6
<i>Mixed</i>			
Private and foreign	4.8	8.7	20.9
State and foreign ^a	7.1	12.7	17.3
Total mixed	11.9	21.4	38.2
<i>Foreign</i>	63.2	48.3	40.2

Source: Central Bureau of Statistics, *Industrial Statistics*.

^a Assuming that the private partners with the Government were all foreign.

number of public enterprises in manufacturing is today larger than it was 15 years ago. Most of these are grouped in the Ghana Industrial Holding Corporation (GIHOC), which, however, is more than a "holding" corporation, for it involves itself directly in the detailed management of the enterprises for which it is responsible.

Senegal

In Senegal, too, State participation in the manufacturing sector dates back to colonial times, but much of it is of more recent origin. Associated with a decline in the real value of private-sector investment in the early 1970s, expansion of State involvement, largely in the form of mixed enterprises began to accelerate. In 1975 alone (the last year for which complete information is available), 19 new mixed enterprises were set up. By that year 97 such enterprises were in operation, of which half were less than four years old. In manufacturing alone, there was a total of 20 public enterprises and mixed enterprises by 1974, contributing a quarter of the total turnover of the sector and over a fifth of value added (see table 2).

To give a fuller impression of the importance of the public sector in the economy, its large contribution to total national production can be gauged from the "all sectors" column. In 1974, public-sector investment comprised nearly half (48 per cent) of total investment in the modern sector. Government participation was, however, heavily concentrated in a small number of large mixed enterprises: 94 per cent of the total value added in the public sector emanated from 20 enterprises. The largest of these were in phosphate mining and groundnut marketing, not in manufacturing; public-sector value added in manufacturing comprised 12.4 per cent of total public-sector value added in 1974.

Table 2. Senegal: contribution of public enterprises to turnover and value added, 1974

(Billions of CFA francs)

Type of enterprise	Manufacturing sector		All sectors	
	Turnover	Value added	Turnover	Value added
Public ^a	37.5	8.4	169.4	67.6
Private	107.5	31.4	305.7	90.7
Ratio public/private	34.9%	26.8%	55.4%	74.5%

^aIncluding mixed enterprises.*United Republic of Tanzania*

What has become known as the Arusha Declaration of 1967 proved to be a turning point in the role of the public sector in the industrialization of the United Republic of Tanzania. Until then the Government had relied mainly on the indirect encouragement of industry through the provision of infrastructure and of incentives for private investment. However, there was a growing impatience with the quantity and nature of the private investment resulting from this relatively passive policy stance, and the Arusha Declaration shifted the orientation of policy towards "socialism" and "self-reliance". This quickly resulted in the nationalization of several industrial concerns and the compulsory acquisition of up to 60 per cent of the shares of a number of others. A national development corporation was given control of these investments and was encouraged to establish further new public enterprises and mixed enterprises.

Table 3. United Republic of Tanzania: indicators of the growth of the public sector in industry, 1966-1978

Year	Contribution of public enterprises and mixed enterprises to total industrial value added (%)	Index of public-sector industrial output (1967=100)	Number of industrial employees in public sector	Index of value added per employee in public sector ^a (1967=100)
1966	5.0	76	...	...
1967	14.4	100	5 302	100
1968	17.8	139	8 792	84
1969	22.5	168	12 350	72
1970	25.6	210	15 454	72
1971	29.1	259	24 836	55
1972	33.2	257	25 387	54
1973	31.5	290	29 595	52
1974	35.0	325	34 778	50
1975	39.2	323	35 278	49
1976	38.5	358	35 300	54
1977	39.0	314	36 450	46
1978	33.6	...	38 381	...

^aObtained by dividing the index of output (1967=100) by the index of employment (1967=100).

So great was the emphasis on the public sector that the plan published in 1969 intended that only 12 per cent of total manufacturing investment and only slightly larger proportions of new manufacturing output and employment should come from private enterprise.

The actual results did not fully measure up to the intentions, but there was nevertheless a very rapid expansion in the years after 1966, as can be seen from table 3. Between 1960 and 1972, the share of public enterprises and mixed enterprises in the total value added of the industrial sector rose by a factor of 6.6; an index of the growth of public-sector industrial output with 1966 as base stood at 339 by 1972; and public-sector industrial employment rose by a factor of 6.6 over the period 1967-1974; in 1974, it accounted for a half of all industrial employment and over 7 per cent of total recorded employment in the country. From about 1972-1974, however, the hectic pace of expansion came to a rather abrupt halt, for reasons to be explored later.

Zambia

Of the countries studied here, the public sector has attained the greatest importance in Zambia, relative to total economic activity. As in Ghana and the United Republic of Tanzania, there is a continuous history of State involvement from the colonial years, and the immediate post-independence years showed little marked change of basic strategy, although State involvement in industry accelerated. In 1968, however, President Kaunda made an important speech announcing what became known as the "Mulungushi reforms". In essence, these and later reforms implied a policy whereby large-scale enterprise would be the reserve of the State and small-scale industries would be open to the private sector. Since nationalization was forbidden by the constitution, 24 foreign-owned concerns were "requested" to "invite the Government to join their enterprise" to the extent of 51 per cent of their shareholdings. There were further take-overs a little later, most notably of copper mining companies and financial institutions. However, there have been few new take-overs since 1974.

As a consequence of these policies, the public sector has come to dominate the productive sectors of the economy other than agriculture and construction. Well over half of GDP is estimated to originate in the public sector, and at least a third of total national wage employment. Table 4 summarizes some key statistics for the manufacturing sector for the period of most rapid expansion, 1969-1972. As can be observed, by 1972 the public sector was responsible for nearly two thirds of total fixed assets in manufacturing, over half of value added and over a third of total employment. However, the indications are that there may have been some relative decrease since 1972.

Most, if not all, State enterprises in the manufacturing sector are the responsibility of the Industrial Development Corporation (INDECO), which is a holding company in form, although it has increasingly involved itself in the detailed management of its various subsidiaries. It also makes decisions about cross-subsidization, short-term financing, and to a lesser extent, the allocation of investible resources. In turn, INDECO is a subsidiary of the Zambia Industrial and Mining Corporation (ZIMCO), an umbrella organization responsible for most public enterprises in all sectors of the economy.

Table 4. Zambia: indicators of the share of the public sector in manufacturing, 1969-1972

Year and sector	Turnover (millions of kwachas)	Fixed assets (millions of kwachas)	Value added (millions of kwachas)	Number of employees
1969				
Public sector ^a	45	...	...	4 600
Zambia total	270	...	...	37 000
Share of public sector	17%	...	...	12%
1972				
Public sector ^a	200	117	95	17 000
Zambia total	440	182	182	45 000
Share of public sector	45%	64%	52%	38%

^aINDECO enterprises only.

Comparison of the cases

The four cases described above, while selected on the simple criterion of availability of data, do nevertheless provide quite an interesting sample. They straddle eastern and western and anglophone and francophone Africa. They include at least one economy that must be considered to be based on private enterprise (Senegal) and two in which public enterprises have assumed dominant roles outside agriculture (United Republic of Tanzania and Zambia). In the latter two countries publicly owned manufacturing is based largely on enterprises taken over from private ownership, whereas in Ghana there has been little nationalization and many public enterprises were created wholly by public investment. Two of the countries (Ghana and Zambia) must be considered relatively well endowed with natural resources, the other two much less so. All, interestingly, have gone through periods of rapid expansion of the public sector, which periods, however, came to an end some years ago. Three of them have enjoyed political stability since independence, and two are governed today by the same leaders who led them to independence; only Ghana has been marked by serious political instability, but even in that country there has been much continuity of policy.

Although four incomplete case-studies provide little scope for generalization, they do, nevertheless, form an interesting basis for study, with some claim to be representative of sub-Saharan Africa as a whole. What, now, is the evidence concerning the economic performance of public enterprises in these countries?

Evidence of economic performance

Policy objectives

On the principle that performance of public enterprises should be appraised by reference to the goals they were set up to achieve, rather than by external criteria of the observer's, the objectives of the four Governments must

be considered first. But this procedure immediately raises a fundamental problem, for the State's objectives are rarely articulated with much precision.

The most fully described set of objectives of the four Governments is found in Senegal, where the following have been listed as among the reasons for establishing State enterprises:

(a) To establish national control over key sectors, especially those involving important national resources (groundnuts and phosphates), infrastructure and essential services;

(b) To create skilled job opportunities for Senegalese in the modern sector of the economy;

(c) To maximize foreign currency earnings for reinvestment within Senegal by taking large equity positions in major export enterprises;

(d) To promote development in promising economic activities (tourism, cotton, sugar) where private initiative has proved insufficient;

(e) To provide infrastructure, credit, research, promotion and other vital factors to promote faster economic development, especially in partnership with the private sector;

(f) To acquire new technology and managerial expertise from abroad and from the domestic private sector;

(g) To attract foreign financing, which sometimes prefers to channel its funds through quasi-public institutions rather than through the public administration;

(h) To develop an organizational structure that is more flexible than the Government's administrative services.

However, the World Bank report from which this list is taken² goes on to say that the Government of Senegal has not yet developed a philosophy for the economic role of the public sector, but rather approaches the issue on a case-by-case basis.

Government objectives in Zambia, as set out in the Mulungushi reforms and subsequently, have emphasized economic independence, Zambianization, employment creation, economic diversification and rural development. In practice, public enterprises have also been used as instruments of regional policy, providing necessary but uneconomic services to remote areas and creating jobs in these areas. Public enterprises have also been used as means of holding down the cost of living.

Although government objectives in the United Republic of Tanzania have not been stated precisely, the Arusha Declaration emphasized the central principles of socialism and self-reliance. Private enterprises were to be nationalized to bring the means of production under public control. The principle of self-reliance stressed the importance of employing local skills and resources to satisfy the domestic market and to reduce dependence on foreign resources and technology.

For Ghana during the Nkrumah period, when most of the present public enterprises were created, the primary motivations were to create public enterprises (a) as development projects and (b) as instruments of political

²World Bank, "Senegal—the para-public section report", *op. cit.*

power. Under the former heading, expansion of the public sector was seen as a means of reconciling the desire to modernize the economy with a wish to increase the degree of economic independence. State investments were seen as filling a vacuum that the private sector could not occupy. They were to generate surpluses for reinvestment in further growth, to introduce improved techniques of production and to capture economies of scale.

But public enterprises were also seen as instruments of political power and control. They provided substantial sources of patronage by bringing within the State sector a considerable number of higher-level managerial appointments and a much larger number of manual jobs. They provided the possibility of subsidizing consumers through pricing policies, and they provided a means of spreading physically impressive projects through most of the country. That there were conflicts between the political and developmental objectives just mentioned is too obvious to need further elaboration.

Despite the multiplicity of objectives, however, all four Governments have placed particular emphasis on financial results when monitoring the performance of their public enterprises and have paid particular attention to the profit criterion. In Ghana, for example, all Governments, including the present one, have employed the profit criterion and have implicitly agreed with the policy set out in the 1964 seven-year plan:

"The projects chosen for state investment must include a large proportion with high rates of return and short pay-off periods. . . . State enterprises will be expected to make a contribution to the public revenues within a reasonable time, and they should not be allowed to become a permanent liability to the economy: enterprises which make losses permanently represent a waste of both capital and current labour resources."³

President Kaunda of Zambia has also stressed the profit criterion. While industrial public enterprises should show a greater consideration of social factors than would be expected of private business, they must nevertheless "operate in a business-like manner, become ever more efficient and profitable, and stand on their own in a ruthlessly competitive economy".⁴ They are expected to yield an annual rate of profit of 12-16 per cent, depending on the riskiness and expansion plans of the enterprise.

Since in certain clearly defined conditions profitability can be a useful summary indicator of economic efficiency, and an enterprise's ability to generate surpluses certainly affects its ability to make a continuing contribution to industrialization, and since in any case Governments tend mainly to apply the profitability criterion in their own judgements about the performance of public enterprises, the financial record may be the logical place to begin an evaluation.

Financial performance

Of the four countries, the data on Zambia are the fullest. During the first five years of growth and expansion into diverse manufacturing activities, INDECO maintained a fairly steady record of profitability, as can be observed from table 5. During the period 1970-1974, there was an average net profit

³See "Report of statement by Vice-President of Ghana stating the government's commitment to making public enterprises viable and profitable", *West Africa*, 30 March 1981, p. 681.

⁴From "Report by President Kaunda on the economic situation in Zambia" (30 June 1975), p. 16.

Table 5. Zambia: net profits (losses) of INDECO Group
(Percentage)

<i>Financial year</i>	<i>Turnover</i>	<i>Net assets</i>
1970	7.5	7.7
1971	6.2	7.8
1972	5.8	8.5
1973	5.4	6.9
1974	5.8	7.8
1975	1.0	1.5
1976	(2.1)	(3.2)

equivalent to 6.14 per cent of turnover and a return on net assets of 7.74 per cent, a modest rate of return and below the target range specified by President Kaunda but nevertheless a reasonable foundation upon which to build financial strength. In 1975, however, there was a shortfall; and in the following year (the last for which data are available) the corporation recorded its first net loss, equivalent to 3.2 per cent of net assets.

The results summarized in table 5 are, of course, merely the consolidated results of the several subsidiaries operating under the INDECO umbrella and conceal wide variations from enterprise to enterprise. Data on individual subsidiaries are therefore provided in table 6. A real estate subsidiary that has consistently made losses and a trading concern that yielded large rates of return until 1974 have been included, although both belong outside manufacturing, with which this paper is concerned.

The large variations in the results of individual subsidiaries over time should be noted. They are partly due to delays in getting projects into normal product cycles and changes in the internal composition of the subsidiaries (several of which are themselves holding companies). The breweries and Steelbuild companies, which, ironically, were nationalized precisely because

Table 6. Zambia: INDECO and divisional consolidated accounts, profit on net assets, 1970-1976

(Percentage)

<i>Division</i>	<i>1970</i>	<i>1971</i>	<i>1972</i>	<i>1973</i>	<i>1974</i>	<i>1975</i>	<i>1976</i>
Breweries	34.0	29.5	25.8	18.4	16.0	9.8	8.3
Chemicals	— ^a	4.2	6.9	5.7	8.2	0.3	5.1
Industrial holdings	— ^a	— ^a	(5.6)	2.0	21.1	30.5	2.9
Real estate	(2.9)	(1.1)	(1.1)	(1.4)	(1.4)	(0.7)	(9.0)
Trading	5.3	6.3	12.6	7.5	12.4	— ^a	— ^a
Rucom holdings	(12.3)	(33.8)	4.2	7.9	15.9	^b	^b
Steelbuild holdings	23.1	38.7	18.0	5.0	2.2	9.8	(19.4)
INDECO Group	7.7	7.8	8.5	6.9	7.8	1.5	(3.2)

^aGroup not yet formed or no longer part of INDECO.

^bNet assets are negative.

they were highly profitable, have shown rather dramatically deteriorating returns over the period as a whole, whereas the industrial holding and Rucom groups showed general improvements until the last year or two. These varying trends tended to cancel out until 1974 to provide the rather stable returns recorded in table 5. In 1975 and 1976, however, profitability declined across the board, for reasons to be discussed later. Even in the earlier years, however, no dividend was ever paid on the Government's shareholding in INDECO.

This brings up the issue of financial flows between the public enterprises and the central government budget. It is perhaps because of the implications of the profit-and-loss results for the public finances that cause Governments to emphasize the profitability criterion, rather than because of a belief in profitability as an indicator of economic efficiency. The financial flows between INDECO and the Government are summarized in table 7, from which it can be seen that there was a net flow to the Government in all except the first and last

Table 7. Zambia: government revenues and expenditures related to INDECO, 1970-1975

(Actuals in thousands of kwachas)

	1970	1971	1972	1973	1974	1975
<i>Government revenues from INDECO and its subsidiaries</i>						
On current account						
Income tax	4 957	7 466	8 628	9 202	6 324	3 753
Withholding tax on dividends	—	423	1 072	1 520	919	149
Dividends	—	—	—	—	—	—
Interest payments	1 575	1 750	1 728	1 293	1 107	70
Total	6 532	9 639	11 428	12 015	8 350	3 972
On capital account						
Capital repayments	116	1 925	7 100	1 736	1 618	28
<i>Government expenditures on INDECO and its subsidiaries</i>						
On current account						
Subsidies and grants	518	307	2 013	553	250	11 994
On capital account						
Grants	450	—	960	924	1 748	3 323
Investments	6 402	2 145	396	1 150	2 723	—
Loans	3 544	—	200	451	1 788	3 552
Total	10 396	2 145	1 556	2 525	6 259	6 875
<i>Balance of government revenues (+) and expenditures (-)</i>						
On current account	+6 014	+9 332	+9 415	+11 462	+8 100	-8 022
On capital account	-10 280	-220	+5 544	-789	-4 641	-6 847
Overall	-4 266	+9 112	+14 959	+10 673	+3 459	-14 869

years recorded, with a net flow for the whole period of K 19.1 million. From 1972 on, however, there was a clear declining trend, with a particularly sharp deterioration in the last two years. Moreover, the surplus of K 19.1 million must be set in the context of the flows that could have been expected had the various companies been left in private ownership. It is not improbable that the sum of profits would have been larger, resulting in larger income and withholding tax receipts, whereas there is no reason to expect the Government to have made major expenditures. Depending on the assumptions made, it is likely that the public finances would have been better off by K 40-60 million for the period as a whole had the companies remained in private ownership, although against this one must set the productive assets acquired by the State and the Government's increased capacity to realize its socio-economic goals through control over public enterprises.

One other factor is that, while modest, the returns to government capital investments in INDECO were larger than was the case with the rest of the public sector. During 1970-1974, returns on government loans to INDECO averaged 5.5 per cent, while returns from the remainder of the public sector ranged from 0.9 per cent to 4.2 per cent. In 1975, however, the return from INDECO fell to 1.3 per cent, which was well below the average for the remainder of the public sector.

The availability of information is less satisfactory for the other three countries, although there is something to be said on all of them. As regards Senegal, it is impossible to disaggregate manufacturing concerns from the remainder of the public sector, and the summary information in table 8, which

Table 8. Senegal: financial results and investment financing of the public and private sectors, 1974^a

(Millions of CFA francs)

Item	Public sector	Private sector ^b
1. Revenue	42 208	95 029
2. Costs		
Labour	13 673	30 369
Indirect taxes	13 778	35 588
Other	4 381	6 472
Total	31 832	72 429
3. Direct tax payments	3 634	2 065
4. Surplus after tax	6 742	20 535
5. Depreciation	4 810	5 357
6. Dividends	6 651	2 036
7. Net investible surplus	-4 719	+13 142
8. Actual investment	8 887	10 022
9. Resource surplus or deficit	-13 606	+3 120
10. Less government subsidies ^c	-3 869	-1 569
11. Overall resource balance	-17 475	+1 551

^aData relate only to the modern sector of the economy, excluding phosphate mining.

^bDerived as a residual.

^cRough and incomplete estimate.

is only for 1974, relates to the public sector as a whole (excluding phosphate mining). On the other hand, the table is of some interest because it facilitates comparisons with the private sector and makes a direct connection between financial performance and the financing of investment.

As can be seen from the lower lines of table 8, the public sector incurred a substantial loss in 1974, a loss of about CFAF 8.5 billion if the net surplus figures in line 7 are adjusted for the effect of government subsidies (line 10). Even this underestimates the deficit because of a variety of hidden subsidies not included in line 10. The public sector was hence unable to finance any of its new investment from its own resources, and there was a resource deficit (line 11) of CFAF 17.5 billion. One puzzling aspect of this record is the very large public-sector dividend payments (line 6), which alone absorbed virtually all the current after-tax surplus. It does not seem that such generosity in the matter of dividend payments (many of them to private shareholders in mixed enterprises) could have been in the public interest, given the overall financial results.

By contrast, the private sector appears to have followed a more prudent dividend policy and shows an overall resource surplus even after financing all its new investment. Seen in the context of the objective of economic growth, this ability to generate an investible surplus is important. The public sector's failure in this regard hampered the growth of the public sector and, therefore, the overall economy, as well as creating a large, unwelcome call on the public finances.

Table 8 refers only to 1974, but there is evidence that it illustrates a more persistent tendency for public-sector deficits. This may be partly inferred from data showing that the Government has consistently had to finance the public sector by means of advances and loans, presented in table 9. In fact, the statistics there show that transfers to the public sector were below average in 1974, and that the financial performance of the public sector may well have been worse in the years immediately before and after. No clear trend is apparent in the totals for the individual years 1970/71 to 1976/77, but for that period as a whole the public sector appears to have been considerably more dependent on the Treasury as compared with 1963/64 to 1969/70, even allowing for the distorting effects of inflation. It is also interesting that mixed

Table 9. Senegal: treasury advances and loans to public sector, 1963/64 to 1976/77

(Millions of CFA francs)

<i>Year or period</i>	<i>Public enterprises</i>	<i>Mixed enterprises</i>	<i>Total</i>
1963/64-1969/70	2 394	5 706	8 100
1970/71	0	1 000	1 000
1971/72	307	2 833	3 140
1972/73	4 266	707	4 973
1973/74	50	300	350
1974/75	0	2 015	2 015
1975/76	900	5 013	5 913
1976/77	0	1 108	1 108
1970/71-1976/77	5 523	12 976	18 499

enterprises have absorbed more than twice as much of the Treasury's resources as public enterprises. Evidently a policy of partnership with private capital offers no assurance of profitability.

However, only part of the losses of Senegal's public sector show up in the government budget, for the Government has also used its control over certain banks and over price stabilization funds to channel credits to the public sector in addition to those of the Treasury. That this has been a highly effective way of making additional resources available to the public sector may be inferred from the figures given below on the short-term credit liabilities of the public sector, although they do not reflect well on the financial health of the public sector. The following are annual average short-term credit liabilities (billions of CFA francs):

1971	7.36	1974	24.65
1972	12.39	1975	49.30
1973	14.44	1976	73.00 (est.)

The very large increase in liabilities recorded here quite overshadows the magnitude of transfers in table 9. There was a total increase in liabilities of about CFAF 66 billion and an annual growth rate in these of 58 per cent compound—over 5 times as rapid as the expansion of private-sector liabilities.

Given this evidence, it is not surprising that the World Bank has expressed concern over the deteriorating financial position of the public sector. Even public enterprises of a conventional industrial nature are not self-financing. Although there are no complete data on the financing of mixed enterprises, it was reported by the Financial Controller of the Presidency that 14 mixed enterprises alone posted losses of CFAF 3.3 billion in 1974; only 5 mixed enterprises had ever paid dividends to the Government.

Data on the United Republic of Tanzania indicate a similarly poor financial performance, as can be seen from the first item in table 10. In all except one of the six years recorded, public manufacturing enterprises showed an operating deficit, and also on average for the period as a whole. This implies a net inflow of financial resources from the rest of the economy, the proximate source of most of this being the government Treasury, no doubt, but the ultimate source being the general public. Other evidence suggests a large increase in the size of the deficits in 1976-1978.

The data in table 10 also permit a comparison with the private manufacturing sector, which is shown earning a surplus in all years except one and for the period as a whole. It could be protested that such a comparison is inappropriate because public enterprises would not be expected to act to maximize profits. However, it is official government policy that profit is necessary whether an enterprise is privately or publicly owned. Public enterprise showed an average deficit of TSh 8,341 per employee in the period 1970-1975 compared with a surplus of TSh 4,726 per employee in the private sector. The comparison is even more to the disadvantage of the public sector for the second half of the period.

Two qualifications are in order, however. First, because of doubts about the quality of Tanzanian data, it would be unwise to place great reliability on precise statistical results. Secondly, although most industrial public enterprises failed to make a profit, there were exceptions to this.

Table 10. United Republic of Tanzania: operating surplus and factor productivity: manufacturing sector, 1970-1975
(Tanzanian shillings)^a

Item	1970	1971	1972	1973	1974	1975	Yearly average ^b
Operating surplus ^c per employee							
Private enterprise	9 334.6	-11 650.4	1 613.0	19 080.4	8 041.9	9 698.4	4 726.1
Public enterprise	-7 596.9	858.0	-13 218.2	-771.7	-11 706.6	-7 690.2	-8 341.3
Value added ^d per employee							
Private enterprise	26 414.2	1 334.0	23 538.0	18 866.0	28 589.9	32 538.4	22 205.9
Public enterprise	6 320.7	20 739.1	22 884.1	20 544.1	23 801.7	17 796.9	20 611.5
Operating surplus as proportion of value added							
Private enterprise	0.353	-0.873	0.069	0.661	0.281	0.298	0.213
Public enterprise	-1.201	0.041	-0.578	-0.038	-0.492	-0.432	-0.405
Gross output ^e per unit of operating capital ^f							
Private enterprise	12.24	29.29	18.67	17.74	20.68	14.15	18.10
Public enterprise	5.43	7.46	5.91	6.54	11.19	11.80	7.41

Source: Kwan S. Kim, "Enterprise performances in the public and private sectors: Tanzanian experience, 1970-75", table 2, *Journal of Developing Areas*, 15 April 1981.

^aThe official exchange rate was 7 TSh = \$1.00.

^bWeighted by different frequencies of observations each year.

^cThe difference between the firm's total receipts and its total costs that exclude government taxes and subsidies but include such items as wages and salaries, materials, utilities, rents and depreciation.

^dA residual figure obtained by subtracting all intermediate input costs from total costs.

^eTotal of wages and salaries, rents, depreciation, operating capital costs, operating surpluses and indirect taxes less subsidies.

^fMaterials and energy costs.

Table 11 gives data on financial performance in Ghana. It presents profit-and-loss data on various public enterprises for 1964-1965 and 1969-1970. It shows that the public sector was highly unprofitable in both periods (line 25), although to a lesser extent in the later years. The results appear even worse if it is borne in mind that most of the figures are before provision for depreciation and taxation (see note (a) of the table). Clearly, the resource balance of the public sector was heavily negative during the 1960s. Comparable data for later years are not available; they would, in any case, be badly distorted by the hyper-inflation experienced in Ghana during much of the 1970s.

Table 11. Ghana: profit-and-loss record of selected State enterprises, 1964-1965 and 1969-1970^a

(Thousands of cedis)

Public enterprise	1964-1965	1969-1970
A. GIHOC		
1. Fibre bag factory	-318.8	+109.5
2. State boatyards	-8.4	+90.4
3. Brick and tile factory	-18.7	-31.3
4. Tema steelworks	-295.4	-203.8
5. State cannery	+15.3	+548.2
6. Metal products	+24.4	-67.7
7. Paper conversion	+2.1	+123.3
8. Sugar products { Asutsuare	-983.3	-1 526.8
{ Komenda	-208.5	-1 212.5
9. Cocoa products, Takoradi	-506.6	+1 039.4
10. Paint works	+117.9	+246.3
11. Vegetable oil mills	-323.8	-208.5
12. Marble works	+41.6	-40.3
13. State distillery	+953.4	+857.5
14. Electronic products	+29.8	+100.3
15. Subtotal of above (net)	-1 479.0	-176.0
B. PUBLIC CORPORATIONS etc.		
16. National Trading Corp.	+6 514.5	+2 668.0
17. State Farms Corp.	-12 732.5	-1 361.0
18. State Fishing Corp.	-239.5	-338.3
19. State Construction Corp.	+353.9 ^b	-614.7
20. State Gold Mining Corp.	-2 689.2	-6 754.1
21. State Hotels and Tourist Corp.	-137.4	+51.5 ^c
22. Ghana Airways	-3 573.2	-2 857.4
23. Food Marketing Corp.	-133.6	-237.9
24. Subtotal items 16-23 (net)	-12 637.0	-9 443.9
25. Grand total (net)	-14 116.0	-9 619.9

^aAll commercial-type public enterprises are recorded here for which financial data exist for both 1964-1965 and 1969-1970. The figures are 12-month averages of available data falling within the two-year periods. In most cases it is believed that the figures are for profits or losses before provision for depreciation and taxes. In some cases, however, the figures are after depreciation and/or taxes and in others the figures are trading results only, i.e. before provision for overheads etc. It is possible that some of the figures are after provision for government subsidies, but subsidies have been netted out whenever possible.

^b1963 figure.

^cConsolidated results of corporations responsible for hotels and tourism.

That the basic situation may not have improved can, however, be concluded from the following recent comment on the assertion by the Vice-President that some public enterprises make profits:

"So far as it is known, this is true of only a few. The losses made by the majority completely swamp the meagre profits made by the few, thus making it incumbent on the government to allocate millions of cedis every year to keep the state enterprises afloat. Some of the state enterprises that declare profits do not take all the circumstances into consideration. For instance, whilst no private enterprise would rush to declare profits without first considering the depreciation on both movable and immovable assets as well as allowing for interest on initial or current capital, the tendency is for the state enterprises not to provide for these factors."⁵

When only manufacturing public enterprises are considered, unprofitability is still the general rule. This was so even in the years immediately before and after independence in 1957. Thus, an industrial development corporation accumulated an operating deficit of C 4.0 million in the period 1950/51-1960/61, and for the manufacturing enterprises that were subsequently transferred to GIHOC the upper part of table 11 records deficits for both periods. There was, however, a considerable reduction in the deficit between the two periods. The best GIHOC performers were a cocoa processing factory, a liquor distillery and a fruit cannery; in common with those in the Republic of Tanzania, its two sugar factories made enormous losses. In contrast with Senegal, mixed enterprises did significantly better. All but one of the 14 mixed enterprises for which figures are available were making profits in 1966-1967.

Table 11, as well as table 6 on Zambia, shows financial performance differs sharply from enterprise to enterprise, which is undoubtedly a general feature of all the countries studied. This is not surprising, for large differences in the competitive situations of enterprises operating in different industries, including differences in the degree of State protection, could be expected. One of the issues thrown up by large differences in financial performance of public enterprises is the inefficient resource allocation that tends to result from cross-subsidization. There must be a tendency in such situations for the more efficient (or anyway the more profitable) enterprises to be "milked" to keep inefficient enterprises alive, especially when public enterprises are organized into holding companies like GIHOC and INDECO.

Finally, the economic significance of the financial performance of public enterprises in the four countries and elsewhere must be questioned. This issue is raised explicitly in the literature on Ghana, where it is pointed out that profitability is a reasonable indicator of efficiency only when the market is competitive, but many public enterprises do not operate in such a situation. The monopoly power of Ghana's public enterprises was illustrated by the fact that, in 1969, 83 per cent of the total gross output of public enterprises was produced in industries in which State concerns contributed 75 per cent or more of the total output of the industry. In six industries public enterprises accounted for total output. Estimates revealed no correlation between social and commercial rates of return of public enterprises; and some of the apparently most profitable enterprises (including the distillery and cocoa

⁵"Report of statement by Vice-President of Ghana . . .", p. 681.

products factory in table 11) owed their existence wholly to very high levels of protection from foreign competition and had negative value added when valued at world prices. Other limitations on competitive freedom pull in the opposite direction, towards unprofitability, as in cases where public enterprises are forced to maintain artificially low prices without adequate compensatory State subsidies. As will be mentioned later, this had a particularly adverse effect on agro-based public enterprises in Zambia.

The universal tendency for Governments to apply the profitability test and the implications of financial performance for the public finances and for the resources available for productive investment mean that this criterion must be taken seriously; but the severe limitations of profit and loss as an indicator of economic efficiency should be kept firmly in mind.

Alternative indicators of performance

Productivity and growth

The levels of, and trends in the productivity of labour and capital may now be examined. In the absence of the data needed for econometric estimates of marginal productivities of the two factors separately, it must suffice here to speak of productivity in the sense of average value added (or output or turnover) per man or per unit of capital. The best evidence on labour productivity, so defined, is from Ghana and is summarized in table 12.

It can be seen that in 1969-1970 labour productivity in public enterprises was well below that in private concerns and even further below the rather exceptional figure for mixed enterprises. The contrast with the private sector occurred even though the structural composition of the State and private manufacturing sectors was similar. And the finding that average productivity in public enterprises was only 55 per cent of the private-sector figure in 1969-1970 was almost exactly the same as the result (56 per cent) of an independent

Table 12. Ghana: comparative labour productivities and costs in manufacturing enterprises by type of ownership, selected periods

Item	1962-1963	1965-1966	1969-1970
<i>Value added per person engaged^a</i>			
1. Private enterprises (cedis)	1 635	1 775	1 424
2. Joint State/private (cedis)	4 503	4 415	2 871
3. State enterprises (cedis)	748	690	784
4. Ratio State/private (%)	45.7	38.9	55.1
5. Ratio State/joint (%)	15.6	15.6	27.3
<i>Ratio of total wages and salaries to total value added (%)^b</i>			
6. Private enterprises	23.4	23.4	23.9
7. Joint State/private	14.0	13.5	17.4
8. State enterprises	51.0	46.1	30.6

^aCalculated in constant 1962 prices.

^bCalculated in current prices.

comparison of productivity in industries in which both private and State coexist. It was also consistent with a study of public enterprises in the 1950s, which also found productivity below that in the private sector. The adverse result for the public sector in table 12 is all the more noteworthy because, as will be shown later, it is generally the more capital intensive, which should result in higher rather than lower labour productivity.

However, table 12 does show an improvement in the relative performance of public enterprises during the later 1960s (see lines 4 and 5). By this measure, they remained less efficient than other manufacturing firms, but they were at least catching up. Various steps were taken after a change of Government in 1966 to strengthen public enterprise management, and there may also have been improvements after the newer enterprises had overcome their teething troubles. It would be particularly interesting to discover whether this relative improvement was sustained in the 1970s.

The outstandingly high productivity in joint State-private firms should also be noted from the table, although there was a fall in the second half of the 1960s. This is probably because more mixed enterprises were in the heavier industries and probably also had more efficient management.

These contrasts in average labour productivity were naturally likely to give rise to differences in cost levels, and lines 6-8 of table 12 permit some inferences to be drawn. As can be seen, wages absorbed substantially higher proportions of value added in public enterprises than in the other two groups, creating a likelihood that unit costs were higher in public enterprises. However, it appears that productivity grew more rapidly than average earnings in public enterprises, while they moved roughly together in the private sector, so that the relative disadvantage of the public enterprises (or the relative advantage of their workers) had been considerably reduced by the end of the decade.

Data on the average productivity of capital in Ghana, similar to the data in table 12, are unfortunately not available, and information on capacity utilization must be used as a rough indicator of the efficiency of use of capital. Such evidence as there is implies a low productivity in public enterprises. There is an estimate for 1963-1964—years of considerable economic dislocation—that the actual output of public enterprises was only 29 per cent of rated capacity. There is also evidence on a number of individual manufacturing public enterprises, mainly for the late 1960s, indicating very low levels of utilization in enterprises as diverse as footwear, sugar, copra, oil, alcohol distilling and fibre bags.

This information is almost absurdly out of date, but it is known that industrial capacity utilization generally remained extremely low throughout the 1970s and to the present. What is not known is the relative achievements of the public and private sectors during these years.

In the United Republic of Tanzania, value added per employee in industrial public enterprises declined markedly in 1967-1971 and more gradually thereafter (see table 3, column 4). The figures for the earlier years should probably be discounted because the public sector was being rapidly expanded by nationalization and the industrial structure underlying the index series was thus undergoing large changes. The downward drift from about 1972 is probably more meaningful and indicates a roughly 15 per cent decline in productivity.

Table 10 provides additional information, although for a smaller sample of public enterprises and uncorrected for the effects of inflation. If some provision is made for rising prices, a decline in real value added per employee can be inferred from line 4 of the table. Of even greater interest, however, is a comparison with equivalent data for the private sector, showing for the period as a whole that public enterprise labour productivity was only 90 per cent of that of the private sector, even though it can be inferred from the table that the public sector was more capital intensive than the private sector. The comparison for the final two years of the period is even more to the disadvantage of the public enterprises.

The greatest contrast, however, is provided in lines 7 and 8, recording gross output per unit of operating capital, although the figures should be taken as indicative rather than precise. By this measure, the average productivity of capital in public enterprises was only just over 40 per cent of the private enterprise figure, taking the period as a whole. In this case, however, there did at least appear to be an improving trend, so that in 1974-1975 the public enterprise average was about two thirds of the private figure.

The information on the United Republic of Tanzania also permits a discussion of the contribution of the public sector to the industrialization of the economy. Statistically, industrialization can be indicated by a rising share of industrial activities in GDP, and in the United Republic of Tanzania the share rose from 8.1 per cent of GDP in 1966 to a peak of 11.4 per cent in 1972. Thereafter it drifted down again and was 9.3 per cent by 1978. The period of rapid industrialization was also the time in which the public sector was being rapidly expanded by means of nationalization (see table 3, column 1). It thus cannot be said that nationalization disrupted industrialization, at least in the short term. While it is true that there has been some de-industrialization since 1972 (in the statistical sense of a declining contribution to GDP), it appears to be largely attributable to factors making for a general economic slow-down rather than a result attributable to the public sector alone. Indices of public and private manufacturing value added have values of 121 and 123, respectively, for 1978 (with 1972 = 100), with the series for the private sector lagging behind for all except the final year. What would be particularly interesting to know is the internal growth record of individual public enterprises, but this information is not available for any of the four countries.

There is little to be said under productivity and growth regarding Senegal, except that there appears to have been a decline in the contribution of the public sector. Total sales of all non-agricultural public enterprises in 1973/74 were a little under the 1966/67 level, which must have meant a considerable decline when adjusted for the effects of inflation. There was a substantial rise in the nominal value of sales in 1974/75, but it appears to have been largely a price effect. This information, however, relates to all non-agricultural public enterprises and is not confined to manufacturing.

Finally, there is information on Zambia that may permit some inferences to be drawn concerning productivity trends in industrial public enterprises. Information is available on the turnover of INDECO subsidiaries (although not all of them are in manufacturing) and on the number of employees. To adjust for the effects of inflation, the figures are deflated by the Zambian wholesale

price index, and the following constant (1975) price estimates of turnover per worker are obtained (thousands of Zambian kwachas):

1969/70	11.05	1973/74	13.12
1970/71	9.27	1974/75	12.70
1971/72	15.12	1975/76	13.16
1972/73	15.09		

It should be remembered that for the first few years INDECO was in the process of acquiring a number of new enterprises, so that only from about 1972/73 does the series relate to a fairly settled mix of activities. From then, as is apparent, there has been some tendency for a downward drift in turnover per worker, which may indicate a similar trend in average productivity.

Balance-of-payments effects

It is almost impossible to say anything substantial about the balance-of-payments effects of public enterprises in the four countries, which is particularly to be regretted given the critical nature of the payments constraint in much of sub-Saharan Africa. There is evidence from Ghana that in the late 1960s public enterprises were inefficient earners or savers of foreign exchange, in terms of domestic resources used per unit of foreign exchange, but no more so than the private industrial sector. Domestic resource cost calculations for individual public enterprises revealed a wide spread, as might be expected, including a number with negative value added at world prices, but there were others with more favourable locations on the spectrum of efficiency.

For the United Republic of Tanzania, the data show that manufactures have contributed a declining share of total exports in recent years, falling from a peak of 21.9 per cent in 1971 to 14.7 per cent in 1978, but this decline may have more to do with the erosion and ultimate collapse of the East African Community than with the structure of ownership of the industrial sector. Dependence on imported consumer goods has diminished very considerably since the early 1960s, with a corresponding increase in the share of imports of intermediate and capital goods. Public enterprises have no doubt contributed to this import substitution; but several of them are known to be highly dependent on imported inputs, and it is impossible to say what the net foreign exchange effect may have been. In making such a calculation, it would be important to include the outflow of compensation payments as a result of nationalization but also the diminished flow of dividend repatriations (the same applies to the other countries as well although Ghana has made little use of nationalization). The Government's policy of extending State industry into the production of intermediate and capital goods may have adverse payments effects in the short run, because such industries are particularly dependent on foreign technology and know-how. In the longer term the expectation is that this pattern of industrialization will result in net savings of foreign exchange, but the success of this strategy relies on enough foreign exchange being earned by the remainder of the economy in the interim to permit the realization of the long-term goal. The United Republic of Tanzania's well-known balance-of-payments problems suggest that this condition is not being met at present.

Estimates have also been made purporting to show the net balance-of-payments effects of the public sector in Senegal. Excluding petroleum and phosphates, they show that in 1974 the public sector resulted in a net loss of foreign exchange of CFAF 14,883 million, with modern-sector, private activities recording a net loss of CFAF 26,957 million. However, these estimates do not provide for foreign exchange saved through import substitution, nor do they include any items relating to investment income and capital flows, so they are seriously incomplete. One particular feature of Senegal's record has been the major involvement of public enterprises and mixed enterprises in the accumulation of foreign debt. By 1975, their external indebtedness amounted to \$163.5 million, 67 per cent of total external debt (against only 16 per cent 10 years earlier). The servicing of this debt cost \$23.4 million in 1975, or 62 per cent of total external debt servicing, a considerable outflow of foreign exchange. At that time there was no serious balance-of-payments constraint. If the debts of the public sector have continued to grow since then they may now constitute a more serious factor in the much more difficult payments environment of the early 1980s, and it may be noted that debt servicing absorbed 13.7 per cent of total export earnings in 1979.

Employment and distributional effects

Four aspects of the employment effects of public enterprises may be distinguished, although this results in an analytical framework stronger than the evidence to put inside it. One desired effect throughout the continent is the Africanization of employment opportunities, a policy that relates particularly to managerial, professional and skilled positions but that spreads rather further through the labour force in the francophone countries. There is, secondly, the creation of productive new employment opportunities through the organic growth of existing public enterprises or the creation of new enterprises (as distinct from the takeover of existing private enterprises, which may result in no new net employment). There is, thirdly, the "creation" of non-productive employment through overmanning. Finally, there is the choice of production techniques and the factor proportions these embody, which have an influence on the other three aspects.

The extremely limited evidence available suggests that (a) substantial Africanization has indeed been achieved; (b) there has also been a good deal of overmanning; (c) less success has been achieved in creating new productive employment; and (d) public enterprises have not generally pursued a policy of choosing labour-intensive techniques. On this last point, there is evidence suggesting that Ghana's public sector is particularly prone to capital intensity, with documented examples coming from two sugar factories and a State footwear factory (which installed conveyors to undertake tasks that were not even mechanized in the United States of America). The State also opted for project designs emphasizing grandeur rather than economy, with a particularly strong bias towards the over-design of factory and ancillary buildings. The evidence points in a similar direction in the United Republic of Tanzania. Here, too, there are a number of examples of capital intensity. One suggested reason for this is that the Government has been content to leave the choice of technology to foreign contractors, who may have strong pecuniary interests in

drawing up designs that result in large orders for equipment. There may also be a prejudice within Governments against the adoption of labour-intensive technologies regarded as technologically backward. Thus, the contract for a (financially disastrous) fertilizer factory specified that the foreign contractor should "select the most modern processes corresponding with the latest technical development in the chemical industry".

It goes without saying that any bias towards capital intensity can only subvert the objective of creating employment, which is one reason for fearing that public enterprises may not have brought about a great deal of new productive employment. Another is the absence of any strong evidence of strong growth of output within individual public enterprises. Most of the growth of the public sector has simply been the result of takeovers (except in Ghana, where many new enterprises were created in the 1960s), and it was shown earlier that the public sector tends to level off quickly once the period of nationalization is over.

There is little doubt, however, that the growth of State enterprise has been associated with an accelerated Africanization of industrial employment, especially at managerial levels. This has certainly been the case in Zambia. Particular emphasis has been placed there on training programmes for Zambian personnel and on replacing foreign management with local. As a result, 96 per cent of the total INDECO labour force was Zambian in 1974/75, although the proportions were lower for technical and executive posts. A similar trend is observable in Senegal, where there was probably greater initial scope for Africanization. By 1977, 70 per cent of all managerial and technical personnel in the public sector was reported to be Senegalese, against only 32 per cent in the private sector. The proportion of nationals in total public-sector employment was the same as that just reported for Zambia, 96 per cent, against 92 per cent in the private sector. Although precise data are not available, similar results have certainly been secured in Ghana and the United Republic of Tanzania. For none of the countries is there any precise evidence on the possible losses in efficiency resulting from accelerated Africanization, for this is a subject too sensitive for investigation.⁶ There are good *a priori* reasons for expecting such losses to be significant. The absence of evidence is regrettable because it would be desirable for Governments to relate the speed of Africanization to the efficiency costs of alternative approaches.

Accelerated Africanization also has distributional consequences, which is one of the chief motives for it. Above all things, it is likely to result in a shift in the total wage bill away from foreigners and towards nationals, which would be universally regarded as desirable in African States. However, it may also widen income disparities in the African labour force, since a high proportion of the jobs formerly occupied by foreigners were in highly paid occupations. There would be much less unanimity about the desirability of this change.

There are at least two other ways in which the growth of public enterprise has tended to affect income distribution. First, it has sometimes been used to achieve a wider dispersion of economic activity across the country, as has been done in Ghana and Zambia. Secondly, Governments can use their control over public

⁶There is evidence from Ghana's publicly owned gold mines, however, where an official report gave over-rapid Ghanaianization as one of the reasons for low efficiency.

enterprises to subsidize consumers. Zambia also provides examples of this, including the maintenance of artificially low prices for the products of agro-based industries (especially vegetable oil products). If the products in question are particularly important in the consumption patterns of low-income groups, such a policy may be used as a rough-and-ready way of reducing (or preventing an increase in) disparities in real incomes across socio-economic groups. The qualifying clause is an important one, however, and for a wide range of products the net effect of this form of subsidy is ambiguous. In Ghana (where public enterprises have also been used in this way), for example, it was found that price controls designed to reduce inequalities actually worked to increase them.

Although public enterprises clearly do have distributional consequences, it is impossible to say whether the general effect of these is to reduce or increase the skewed distribution of real income. Public enterprise does not necessarily have much direct connection with those approaches to socialism that emphasize the importance of reducing inequalities.

Conclusions on economic performance

The evidence on economic performance considered above is obviously unsatisfactory: incomplete, anecdotal and unreliable. It is also probably biased towards negative findings because unsatisfactory performance is more likely to be investigated and reported than the records of successful enterprises. Nevertheless, it is the best evidence obtainable.

Of the four countries studied, only in Ghana has there been an attempt at an over-all evaluation, and it may be worth quoting from this evaluation at some length (p. 227)

"In the end, it has proved harder to use a single criterion of comparative economic performance, which is analytically satisfying and amenable to empirical testing, than it has been to characterize the general standard of economic performance of Ghana's public sector. Despite measurement problems, the spotty nature of the evidence and substantial variations between specific enterprises, it may fairly be concluded that the comparative economic performance of the public sector was poor in the sixties.

"State enterprises were unprofitable—absolutely, by comparison with public enterprises in other developing countries and by comparison with private enterprise in Ghana and they were unprofitable despite considerable monopoly powers. While profitability is an unsatisfactory yard-stick, data on relative productivities, unit costs and balance of payments effects also point fairly unambiguously in the direction of poor comparative performance."

If it were possible to write a comparable verdict on public enterprises in the other three countries, it would probably be less negative than for Ghana, whose public sector faces particularly severe problems. Nevertheless, it is difficult from the evidence available to point with confidence to any substantial achievements, except in the area of Africanization. Perhaps the most authoritative general evaluation of public enterprise performance is that made by the World Bank.⁷

⁷World Bank, *Accelerated Development in Sub-Saharan Africa: An Agenda for Action* (Washington, D.C., 1981), p. 38.

"With the exception of the mineral-exporting parastatals and some of those trading in export crops, public enterprises have thus far caused serious fiscal burdens. They do not pay taxes. Most of their investment costs are covered by transfers (from government budgets, the banks, or marketing organisation surpluses); in some cases their cash surplus is less than their depreciation; and in a few instances cash flow does not even cover running costs. A number of the manufacturing parastatals—and mixed public-private enterprises—are moderately profitable. But this is usually because they enjoy very high levels of protection from the world market, explicitly in the form of a heavy duty on competing imports, or implicitly because components are imported duty free. In many cases their value added at international prices is but a fraction of their value added at domestic prices, in some cases value added may even be negative. In general, because the parastatals in the commercial sectors generate so small a surplus, their growth has been limited by the availability of the resources they can command from governments."

Governments or ministers themselves often express dissatisfaction with the results achieved by State enterprises, as did President Kaunda when he sharply criticized parastatal manufacturing companies for their inefficiency and went so far as to praise companies with larger private shareholdings and expatriate management for achieving greater efficiency (which he characteristically equated with profitability).

Of concern here is the ability of public enterprises to contribute to industrialization, and the results reported above are not encouraging in this respect. Of special significance is the evidence showing that the public sector generally has a negative resource balance, as reported in tables 8 and 10. This means that public enterprises are unable to generate the surpluses needed to meet their own investment requirements. In the absence of large government subsidies or injections of funds from outside, the failure to generate a surplus necessarily limits the contributions they can make to the continuing process of industrialization. Such evidence as can be brought together on trends in real output and in productivity reinforce the impression of an undynamic public sector, failing to display those improvements that would normally mark an expanding industrial sector.

Another point that should be considered is the impact on private industry of policies that favour a large public sector. In three of the four cases, the public sector was largely created on the basis of nationalization or compulsory acquisition of part ownership. This was not true in Ghana, but nevertheless the policies that led there to the rapid growth of State industries in the first half of the 1960s also discouraged private investment, which has since remained at very low levels. If, as seems likely, the creation and maintenance of a large proportion of State industries has the effect of discouraging private investment—by creating uncertainties about the future security of ownership, about the State's attitudes towards private enterprise and profit, about the extent to which private concerns will be permitted to compete fairly with public enterprises, and so on—then it seems exceedingly unlikely on the basis of the evidence obtained that public ownership has contributed positively to industrialization.

This does not necessarily mean that State industry has been a mistake, however, for, as pointed out earlier, Governments have had several objectives in

setting up public enterprises in addition to the promotion of industrialization. More particularly, it should be stressed that all the criteria applied in the analysis have related to economic performance, as if Governments give most weight to economic objectives. This is by no means always the case, however. Political and social goals may carry greater weight in practice. So while Governments frequently grumble about "inefficiency" in public enterprises, it is very rare indeed for any of the enterprises to be closed down or sold off, which suggests that they must be perceived as satisfying some non-economic objectives.

Determinants of economic performance

Having surveyed the evidence related to economic performance, the next step is to examine the determinants of this performance. Here, too, the evidence is extremely incomplete but nevertheless suggestive. In undertaking this task, it is useful to draw a distinction between the influence of economic conditions tending to impair industrial performance and those factors bearing particularly upon the performance of public enterprises.

The economic environment

In the circumstances of most African economies a number of factors act as a drag on industrial efficiency. These include the often very small size of the local market, unreliability of local sources of supply, shortages of foreign exchange, inadequate infrastructure, and a variety of uncertainties that make planning difficult. Of these, shortages of foreign exchange appear to have been particularly serious in three of the four countries (there was no balance-of-payments problem in Senegal during the period in question). Thus, in the United Republic of Tanzania, industry has suffered seriously from shortages of raw materials resulting from inadequate foreign exchange allocations, and the same is true of Ghana and Zambia. Even though the import licensing authorities in Ghana have discriminated actively in favour of the public sector, public enterprises have nevertheless experienced difficulties in obtaining adequate allocations at the right times, so that factories have been subjected to frequent and prolonged stoppages. In all cases, these types of shortage have contributed seriously to the underutilization of capacity, reported earlier.

In land-locked Zambia, transport problems are cited as creating particularly severe difficulties. Port congestion has led to prolonged project completion times, interruptions in production and higher financial charges to maintain abnormally large inventories. The extended pipeline and fairly frequent rerouting for getting goods from the ports into the country have also contributed to increasing costs, although these problems may be eased as a result of Zimbabwean independence.

The Ghana study draws attention to the adverse effects of the disintegration of economic organization and decision-making that became apparent in the first half of the 1960s and has persisted in varying degrees ever since. Examples are provided of how the inadequacies of some parts of the

public sector impose costs on other parts, thus tending to create a vicious circle. In Zambia, various public enterprises have been much affected by the fluctuating fortunes of the copper mining industry, partly because they have a powerful impact on total consumer demand but also because the industry is itself a large purchaser of certain manufactured products.

In addition to such general economic considerations, however, other factors more specific to public enterprise have an important bearing upon their economic efficiency and are discussed below.

Project planning

Evidence suggests that deficiencies in project planning have contributed substantially to substandard economic performance. Thus, an observer of public enterprises in the United Republic of Tanzania commented that each project mushroomed in its own way without taking into consideration the local resources, linkages to other industries and development needs of the country. The linkage between cement and fertilizer industries in the use of sulphuric acid was not taken into account, for example. A study of a fertilizer factory showed the disastrous results that can follow when an inadequate feasibility study, undertaken by contractors with a pecuniary interest in the outcome, is scrutinized by an inadequately staffed government agency.

The study on Senegal reports in similar vein. The rapid growth of the public sector took place in an unplanned fashion, sometimes without sufficient consideration for the impact on the economy or the public finances. Procedures for evaluating proposed investments in public enterprises were not followed, resulting in agreements with commercial sponsors over which the Ministry of Finance had no effective say.

In the study of Ghana, a wide range of planning deficiencies is discussed and many examples provided. Poor planning resulted in the choice of excessively capital-intensive techniques, in poor technical designs, in serious mistakes on the location of projects, in major construction delays (as have also occurred in Zambia) and in very poor co-ordination of the agricultural and industrial aspects of the projects intended to process locally grown raw materials. As in the Tanzanian case, examples are also given of the negative effects of relying upon inadequate feasibility studies, often conducted by consultants with pecuniary interests in the outcome of their studies, resulting in a systematic bias towards over-optimism in predicted results.

Financial considerations

There are actually two rather different factors to consider under this heading. The first is the practice of Governments of using their control over public-enterprise policies to hold prices down and thus subsidize the final consumers. The chief example of this practice relates to various agro-based industries (largely producing vegetable oil products, detergents and soap) in Zambia. Stringent government control over the prices of refined oils and fats have contributed heavily to large financial losses by the companies because of the reluctance of the Government to make adequate financial provision for

subsidies to cover the effects of its pricing policies. The result has been not only to worsen the profitability of the enterprises, so that they have even had difficulty in covering the cost of their factory operations; it has also lowered morale and led to a shift in the product mix away from the production of oils and fats, precisely the opposite of the Government's apparent social priorities. There are similar examples of such situations in Senegal and Ghana, although they do not relate to manufacturing enterprises.

A second factor to consider here is the frequent complaint that public enterprises are undercapitalized and badly affected by shortages of working capital. Thus, the Senegal Government has been said in some cases to have over-extended its financial means with its ambitious programmes of investment in the public sector, with the result that many enterprises are inadequately capitalized and hence unable to realize their objectives. (It is also reported in this case that the Government often does not pay its bills to public enterprises, thus also undermining their financial strength.) In Ghana, GIHOC (and before it, the Industrial Development Corporation) has complained that it was funded with inadequate working capital.

The difficulty with this type of complaint is to disentangle cause from effect. Undercapitalization can undoubtedly be a cause of poor economic performance, but poor performance can equally be a cause of undercapitalization, in the sense of inadequate stocks of working capital. It has already been noted that the public sector is associated with a negative resource balance, which reduces its ability to self-finance not only fixed capital formation but also working capital needs. Detailed research on the Industrial Development Corporation indicated that the real difficulty was not shortages of funds but the inability of the public sector to find paying investments and to administer its projects. As its managerial weaknesses became increasingly evident, government confidence in the Industrial Development Corporation diminished, and ministers were increasingly tempted then to interfere in its day-to-day operations, which made matters worse. Poor performance, shortages of funds and deteriorating relationships with Government became a vicious circle. The conclusion on the alleged undercapitalization of Ghana's public sector was that it represented an example of what has been termed a "capital shortage illusion" and that a more serious problem was the low productivity of those public-sector investments that were made.

Over-manning

Engaging larger labour forces than is necessary to achieve given levels of output is a further source of weakness. There are documented complaints about overmanning in Senegal and Ghana, but it is so pervasive a problem that it is no doubt found in the United Republic of Tanzania and Zambia as well. In Senegal, the financial consequences of overmanning are compounded by the pursuit of a high-wage policy. Thus, in 1974, the average salary in the public sector was 14 per cent higher than in the private sector and 10 per cent higher than in the civil service. With more Senegalese nationals in the better-paid jobs, the average earnings of Senegalese employees of the public sector were 39 per cent more than for Senegalese in private activities.

That an inflated labour force is a serious problem in Ghana is suggested by a 1966 report by the State Enterprises Secretariat complaining that overstaffing was a major problem of State corporations; hardly any enterprise was not overloaded with redundant staff. Various examples of specific manufacturing public enterprises that have suffered from this problem can be cited, including the extreme example of a bamboo processing factory that was found in 1966/67 to have spent just C 219 on raw materials while wages and salaries amounted to C 16,184. Overmanning is also a serious problem among the public enterprises of the United Republic of Tanzania, the financial effects of which are compounded by wage rates more than a quarter higher than those in the private sector.

Overmanning must clearly be related to the government objective of creating employment. Even though it is easy to show that forcing public enterprises to employ more workers than they need is an absurdly inefficient and inequitable way of providing unemployment relief, there is no doubt that much overmanning is at government insistence. On the other hand, it is too easy to blame it all on the politicians: the Ghanaian evidence suggests that some of the problem is also due to weak, inefficient management that is only too happy to pass the blame on to the Government.

Shortages of managerial and other skills

The World Bank study of Senegal breaks down the management problems of the public sector into four aspects: (a) the number of trained managers and middle-level technicians; (b) accounting; (c) relations with supervisory ministries; and (d) the role played by boards of directors. It focuses particularly on the second of these, charging that the lack of proper accounting and accurate data is probably the single greatest obstacle to reform of public enterprises. Accounting standards are low; budget rather than analytical accounting is employed; and management and the Government lack data essential for monitoring operations.

There is also a complaint of a shortage of managerial and skilled workers. The private sector is apparently still attracting the best managers, and some managerial posts in public enterprises have been filled on grounds other than proved ability. Training schemes are inadequate and not well suited to meet enterprise needs. Boards of directors are unable to carry out their proper functions, being too large, disparate and inexpert. As a result, board meetings often turn into disputes among enterprise management, supervisory ministry representatives and the agencies controlling the enterprise. In other respects, too, relationships with supervisory ministries are poor, with the ministries interfering with day-to-day management.

Kim's study of manufacturing public enterprises in the United Republic of Tanzania⁸ also finds evidence for the importance of management in explaining substandard performance. Accounting weaknesses are also evident. Thus, the 1979 report of the Tanzania Audit Corporation states:

⁸Kim, *loc. cit.*

"Approximately 100 parastatals were in arrears in the preparation of their accounts for one year or more . . . out of 247 accounts of parastatals certified during the year, only 76 got unqualified audit reports; 138 got qualified reports, 15 received Negative Opinion reports and 18 Disclaimer of Opinion results."

However, the potentially valuable role of the Tanzania Audit Corporation was apparently undermined by the indifference of public enterprise managers, many of whom simply ignored what it had to say. The Tanzania Audit Corporation also states that some boards rarely meet, even on an annual basis, and are thus unable to exercise any control. More generally, there are complaints about the calibre of public enterprise management. In Zambia, too, INDECO suffers from a dearth of experienced Zambian managers, a problem that has become more acute as Zambianization is extended to an ever-widening range of posts.

A similar pattern of complaints also holds true for Ghana. Thus, in manufacturing public enterprises, the State Enterprises Secretariat has complained of shortages of skilled and supervisory personnel, resulting in haphazard planning and budgetary control, and the Auditor General has lamented the dearth of qualified accountants. There are many illustrations of poor management in industrial enterprises; the Auditor General complained that the accounts of the corporations were for the most part kept improperly and production of final accounts was unduly delayed. Echoing the earlier comment on Senegal, he also complained that management had been politicized, that the chairman of a corporation was selected primarily because of his party affiliation. Some attempts have been made to overcome manager weaknesses by entering into contracts with foreign concerns, but these contracts have often been poorly designed and have produced indifferent results. The use of managerial appointments as a source of political patronage represents one of the chief ways in which the political and economic motivations for creating public enterprises conflict with each other. When such a conflict becomes apparent, evidence suggests that it is often resolved in favour of political advantage, notwithstanding the economic costs.

Corruption

Only two firm statements are possible about corruption: (a) corruption is both a potential and actual source of substandard public enterprise performance; but (b) it is impossible to obtain the evidence necessary for any balanced appraisal of the relative importance of this factor. There is surely no doubt that in each of the countries studied corruption has had adverse effects on some decisions relating to investment, purchasing, marketing and personnel hiring policies and so on. There is equally no doubt that there are honest men as well as corrupt and that many decisions are uninfluenced by considerations of illicit gain. Beyond that it is difficult to go, except to note that the issue of corruption was rather thoroughly investigated in Ghana after the overthrow of Nkrumah and that it included examination of a number of public enterprises. Various malpractices were uncovered, and it would be possible to take a "tip-of-the-iceberg" view of these to argue that corruption had a most serious impact on public enterprise efficiency. On balance, however, the Ghanaian evidence (for that period) suggested that corruption was only a secondary

reason for substandard performance. The position may be different in Ghana today because what has become known as "kalabule" has almost been legitimized as a necessary means of supplementing what otherwise would be quite inadequate wages and salaries. In this as in some other respects, however, Ghana represents a rather extreme case.

The political milieu

Of all the factors considered in this section, many observers would place the greatest weight on politics as a factor undermining public enterprise performance. Thus, an early comparative study of the performance of various public corporations in Ghana, Nigeria and Uganda found performance to have been best in Uganda because the corporations had not at that time been politicized to the extent that had occurred in the West African countries. It concluded that the political milieu was far the most important determinant of economic efficiency.⁹ The work on Ghana used for this paper reinforces this conclusion. It talks of a "trivialization of political control", meaning a lack of interest of Governments in matters of general policy combined with frequent interference in the everyday operation of the enterprises. This is entirely contrary to the theoretical model, based on the British concept of a public corporation in which the management has responsibility for day-to-day operations within policy guidelines laid down by the responsible minister.

In the case of Ghana, the most fully studied industrial example is the IDC. There was an almost complete lack of clarity about what the Government wanted the Corporation to do. When the Government became dissatisfied with its performance and wished to formulate a new policy, it left it to the Corporation and an outside expert to formulate this policy. When what was submitted turned out not to be new at all, the Government accepted it just the same; further examples of a lack of effective policy guidance could be cited. Similarly and subsequently, GIHOC also stated that it received no policy directives from responsible ministers; detailed research on Ghana's State gold mines revealed a similar governmental lack of interest in policy.

That this is by no means a problem peculiar to Ghana is indicated by the World Bank study of Zambia. This study reports much concern in the Government about bringing public enterprises "under control" but no clear idea of the purposes for which such control might be exercised:

"In order to bring parastatals into line with policy objectives there has to be a clearly articulated policy with guidelines for its implementation. Government has not provided such guidelines: until August 1977, there was no Investment Code and national planning is weak. Even on a project-by-project basis, many Ministries are not well equipped to provide supervision . . . In some cases policy guidelines simply do not exist, in others there are contradictory policies, and in still other cases guidelines exist only on paper and are dealt with quite differently in practice."¹⁰

⁹C. R. Frank, "The government as producer", in *Government and Economic Development*, G. Ranis, ed. (New Haven, Yale University Press, 1971), p. 117.

¹⁰World Bank, "Zambia—the basic economic report, annex 2: the parastatal sector", *op. cit.*, pp. 40-41.

Information on Senegal illustrates another aspect of the trivialization of political control, namely, a great deal of governmental intervention in detailed operational decisions. The evidence on this aspect is the fullest for Ghana, however. Thus, an early independent report on the IDC complained of outside interference from politicians and others, who expected appointments to be made irrespective of merit, redundant staff to be kept on the pay-roll, disciplinary measures to be relaxed on behalf of constituents, businesses to be purchased at inflated prices, loans to be made irrespective of security and so on.

There is also a different, but probably also rather pervasive, problem to mention under this heading, which is the difficulty public enterprises often encounter in developing satisfactory working relationships with the civil service. Quite apart from the problem of detailed interference, there is a frequent complaint that civil service procedures are too cumbersome to meet the needs of commercial operations, particularly budgetary procedures—an important matter because many public enterprises are dependent on budgetary support for investment financing and sometimes for obtaining working capital.

Conclusions

On the role of the public sector in the industrialization of Africa

If, for the time being, the case materials considered here are assumed to be representative of the general situation and the often tentative interpretation placed upon these materials is accepted, then a clear conclusion emerges. To an African Government contemplating the creation of a substantial public sector as a means of promoting industrialization the advice of this writer would have to be: don't do it; there are better ways of stimulating industrial growth. A large industrial public sector will contribute little to dynamic industrial growth, will tend to become a drain on the public finances, will require a net inflow of resources to cover its capital requirements and will discourage the growth of private industry.

It may well be protested that this conclusion is too negative and that the sources of substandard economic performance surveyed earlier point clearly to ways of strengthening performance. Project planning should be improved; public enterprises should be instructed to keep their labour forces down to commercially justifiable numbers; undercapitalized concerns should be provided with sufficient funds to permit efficient operation; training facilities, salary levels and hiring policies should be changed so as to permit the recruitment on merit of adequate numbers of experienced managers, technicians and skilled workers; corruption should be severely punished; ministers should provide clear policy guidance but desist from detailed intervention in everyday operations. The 1981 World Bank report cited earlier makes some useful suggestions along these lines, including reference to the system of public enterprise contracts developed recently in Senegal. However, such a list of reforms can be considered naïve. Among other things, it disregards the multiplicity of motives that lead Governments to set up public enterprises in the first place and the large *de facto* weight they frequently give to non-economic goals.

On the principle that public enterprise performance should be assessed according to the objectives they were intended to promote, it is incorrect simply to assess them in terms of their contribution to industrialization (or economic development generally). Indeed, it is wrong to confine the evaluation of performance simply to economic criteria, in the way that has been done above. Very frequently there is a trade-off between economic and socio-political objectives, which makes unreasonable the common government practice of judging public enterprise performance by a simple profitability test.

If a multiplicity of government objectives (which, however, are rarely articulated with any clarity) are assumed to be a pervasive feature of State enterprise and if socio-political motives are often given primacy, then a continuation of poor economic performance can be predicted. On this view, substandard economic performance (including an unsatisfactory contribution to industrialization) may be seen, in part at least, as the cost of achieving socio-political goals. In such situations, there is little more that the economic analyst can do than to quantify and draw attention to these costs and to ask ministers whether the costs are regarded as reasonable in relation to the non-economic benefits that may be derived.

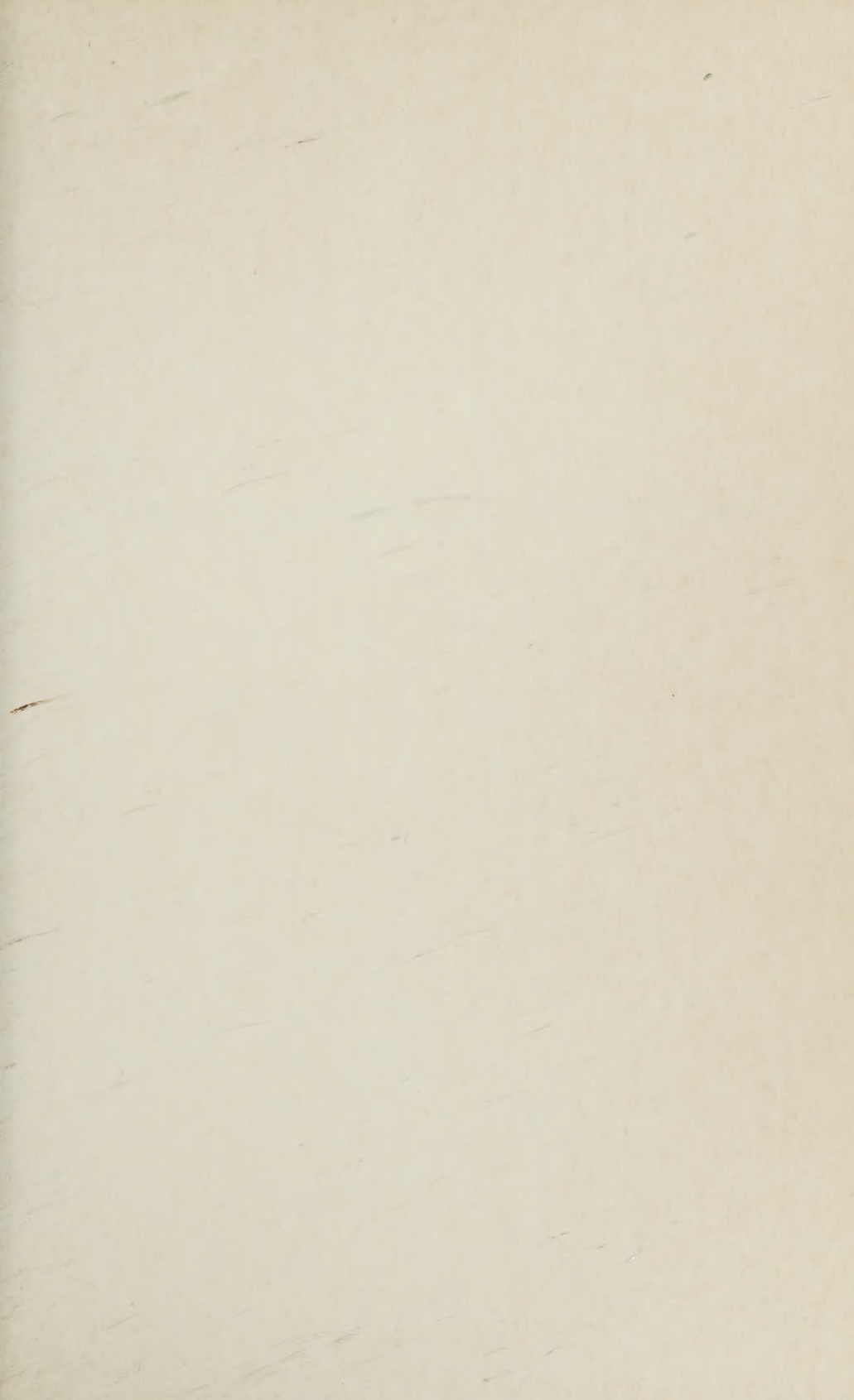
On the need for more information

The fairly strong conclusion just presented depends upon the assumption that the case materials used here are generally representative. Unfortunately, as has been mentioned, the data base upon which this paper rests is weak. A careful search of published sources served mainly to reveal that there was hardly any such information. More information is available to individual Governments than can be found in public libraries and the archives of the United Nations Industrial Development Organization, the World Bank etc. Nevertheless, this writer strongly believes that the lack of data on public enterprises makes it difficult for Governments to supervise them.

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